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# THESIS

A CLASSIFICATION AND ANALYSIS  
OF CONTRACTING LITERATURE

by

Richard F. Sweeney

December, 1989

Thesis Advisor:

David V. Lamm

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**A Classification and  
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Contracting Literature**

by

**Richard F. Sweeney  
Lieutenant, United States Navy  
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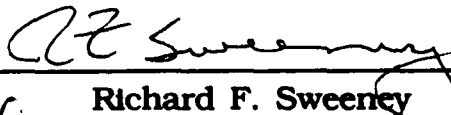
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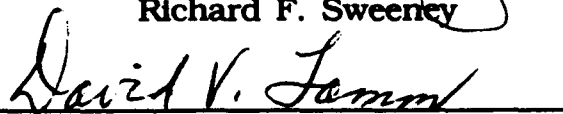
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**NAVAL POSTGRADUATE SCHOOL  
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## ABSTRACT

This thesis was an attempt to classify and summarize literature in the acquisition and contracting field. The primary objective of this thesis was to develop a taxonomy for categorizing literature published in the contracting field. Other than simple author, title, or subject classification schemes, no such taxonomy previously existed.

A secondary objective of this thesis was to evaluate the effectiveness of the taxonomy, to determine how well it met the requirements of the defined optimal classification scheme.

Another objective of this thesis was to apply the taxonomy to a finite body of existing contracting literature. This exercise demonstrated that the taxonomy could be practically applied and the results demonstrated its usefulness.

The final objective of this thesis was to evaluate the information provided from application of the taxonomy to contracting literature. Since the scope of literature to which the taxonomy was applied was limited, the results were necessarily qualified. However, at the least this application provided areas for further research.



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## **I. INTRODUCTION**

### **A. BACKGROUND**

Man's continued progress in his quest for knowledge in the various disciplines has been accomplished by the classification of the field. A hallmark in the development of a particular field is the classification of its content. (Shaw, 1961, p. 1)

This thesis is an attempt to classify and summarize literature in the acquisition and contracting field. The results should serve as a foundation upon which to base expansion of research in the field. It should provide the basis on which contract managers and academics can assess past efforts and plan for the future.

### **B. OBJECTIVES**

The primary objective of this thesis is to develop a classification scheme or taxonomy for categorizing literature published in the contracting field. Other than a simple author, title, or subject classification, no such taxonomy currently exists.

A secondary objective of this thesis is to evaluate the effectiveness of the taxonomy. The taxonomy developed will be evaluated to determine how effectively it meets the requirements of a good classification scheme. The optimal classification scheme possesses numerous attributes. This classification scheme will be evaluated to determine the extent to which it possesses these attributes.



Another objective of this thesis is to apply the taxonomy to existing contracting literature. This exercise should demonstrate that the taxonomy can be practically applied and the results should determine its usefulness. The taxonomy will be applied to a finite body of literature. An all encompassing application to the body of contracting literature would be prohibitive in terms of time required. It would also be unnecessary to determine the usefulness of the taxonomy.

The final objective of this thesis is to evaluate the information provided from application of the taxonomy to contracting literature. What do the results reveal? Have authors focused primarily on certain areas? Have particular areas been neglected? Since the scope of literature to which the taxonomy is applied will be limited, the results will necessarily be qualified. However, at the least this application should provide areas for further research.

### **C. RESEARCH QUESTION**

The primary research question this thesis seeks to answer is:

- How might a focused, organized, and logical classification of contracting literature be established?

Subsidiary research questions include:

- What are the key characteristics of a taxonomical structure that classifies and categorizes contracting literature?
- What existing classification schemes can be legitimately applied to contracting literature?
- What would be the results of classifying the last five years of contracting literature in the National Contract Management Journal?

- What information can be gleaned from an analysis of the classification of this literature?

#### **D. SCOPE, LIMITATIONS, AND ASSUMPTIONS**

##### **1. Scope**

The scope of this thesis is development of a classification scheme for contracting literature and application of that scheme to the literature. It includes the examination of existing classification schemes for applicability to categorization of contracting literature. There are definite boundaries the researcher has imposed on this effort.

The scope of this research was limited in that in considering existing classification systems for application to contracting literature, this research did not focus on classification by subject, author, or title. That type of classification is conventional and has been done on several occasions. It is more commonly called indexing in that its principal purpose is information storage and retrieval. The most recent compendium, the National Contract Management Journal Cumulative Subject, Author, and Title Index, was published by the National Contract Management Association in 1989. Classification as it will be defined in this thesis differs from simple indexing. The more mature classification scheme this thesis will attempt to develop should be useful in describing types of research as opposed to simply cataloging subject matter.

A further limitation on scope is the selection of contracting literature to which the developed taxonomy will be applied. It would be

impracticable to attempt to apply the taxonomy to all contracting literature. First of all, there is no single source or record of all contracting literature. Such literature can be found in books, articles, studies, etcetera. Second, time constraints require some limit on the volume of literature to which the classification scheme will be applied. Finally, the primary thrust of this thesis is development of the taxonomy itself. Application of the taxonomy is secondary.

To that end, the taxonomy will be applied to all articles in the National Contract Management Journal between Volume 18, Issue 1 (Summer 1984) and Volume 22, Issue 2 (Winter 1989). This publication was chosen since it is the premier channel through which contracting knowledge has been disseminated throughout the contracting community. Its works are the most scholarly and highly respected in the field. The most recent five years of issues were selected because they should represent the most current contracting effort.

## **2. Limitations**

The only limitations on this thesis are the time constraint on its completion and the availability of required contracting literature. Due to the scope limitations imposed by this researcher, neither of these factors further hinder this effort.

### **3. Assumptions**

There were no significant assumptions made in the conduct of this thesis.

### **E. LITERATURE REVIEW AND METHODOLOGY**

This research effort parallels a similar effort in the Materials Management field. Alvin J. Williams and A. Ben Oumlil developed a taxonomy to classify research reported in the Journal of Purchasing and Materials Management (Williams, 1987, pp. 24-28).

...it is important to summarize and classify the research that has been reported over the past 22 years and to use this information as a foundation on which to build in refining and expanding the discipline.

An exercise of this type provides insight into the nature, scope and dimensions of a body of thought. It allows researchers to accurately label and identify phenomena as being purchasing related. Parameters can be identified and boundaries can be placed around the discipline. Given the importance of understanding a discipline and the research contributions to that area, the objective of this article is to provide an approach by which greater understanding can be attained. This effort should result in improved knowledge concerning the status of the discipline. (Williams, 1987, p. 24)

The methodology for this thesis was to first determine the characteristics of the optimal taxonomy. Several sources cite attributes that the optimal classification scheme should possess.

Given the characteristics of the optimal taxonomy, the second phase of this research focused on identifying existing taxonomies and evaluating them according to the desired attributes. The existing taxonomies selected, of course, had application to classification of

literature. A taxonomy designed to classify nature (e.g. mammals versus reptiles) has marginal application to classification of literature thus was not considered in this research. An attempt was then made to blend the best features of existing taxonomies and independent thoughts to develop a taxonomy best suited for classification of contracting literature.

The next phase of this effort was to apply the resulting taxonomy to the selected contracting body of literature from the National Contract Management Journal. As a reading of all the articles was required to perform this phase, the researcher deemed the composition of a brief synopsis of each article a worthwhile endeavor. The results are included in the Appendix.

The final stage of this effort was an evaluation of the results of applying the taxonomy to the body of knowledge.

## **F. DEFINITIONS**

For the reader of this thesis a few general definitions are provided below. Both of these terms will be discussed in greater detail in Chapter II.

- Taxonomy - the theory and practice of delimiting and classifying different kinds of entities. It includes the classification system itself, the theory used to build it and the methods used to construct it.
- Classification - the development of a system to enable researchers to arrange entities into taxa based on their similarities, differences, and relationships to one another.

## **G. ORGANIZATION OF STUDY**

This study consists of four chapters and an appendix. Chapter I provides broad perspective of the purpose of this effort, its background, scope, methodology, and organization.

Chapter II will detail the characteristics of the optimal taxonomy and examine several existing taxonomies in light of the desired characteristics. In this chapter, the taxonomy for classification of contracting literature will be developed.

Chapter III will describe the results of applying the taxonomy to the contracting literature in the National Contract Management Journal over the five year period from Summer 1984 through Winter 1989.

Chapter IV will present conclusions and recommendations as to possible improvement on the taxonomy, information on contracting literature gleaned from application of the taxonomy, and further research required.

The Appendix will provide a brief synopsis of each of the articles from the ten issues of the National Contract Management Journal issued during the period 1984-1989.

## **II. DESCRIPTION OF TAXONOMY**

### **A. INTRODUCTION**

When one thinks of the classification of literature, one generally focuses almost entirely on the practice of categorizing the literature by subject matter. But what is classification actually? What is the difference between a "taxonomy" and a "classification system"? By definition, a taxonomy includes not only the classification system itself, but also (a) the theory on which the classification system is built and (b) the methods employed to construct it (Chrisman, 1988, p. 415).

Classification assembles things according to their degrees of likeness and separates them according to their degrees of unlikeness (Sayers, 1955, p. 20). Classification is the development of a system or scheme in order for researchers to arrange entities into categories or taxa based on their similarities, differences, and relationships to one another (Chrisman, 1988, p. 415). The most obvious reason to classify things is for the sake of order, for "order is Heaven's first law." (Sayers, 1955, p. 1)

This effort attempts to develop a taxonomy for contracting literature. It will include development of a classification system and a discussion of the theory and methods used to construct the classification system.

This chapter will enumerate the basic objectives of a classification system and describe the necessary attributes of an effective classification system and its taxa. It will then examine existing schemes in light of characteristics of the optimal system. Finally, the chapter will present the classification scheme developed for contracting literature.

## **B. OBJECTIVES OF A CLASSIFICATION SYSTEM**

There are four basic objectives of classification systems. They are (Chrisman, 1988, p. 415):

- differentiation
- generalization
- identification
- information retrieval

A classification system should segregate entities possessing diverse traits. Differentiation is a necessity so that distinctions and contrasts can be made between categories or taxa of unlike entities. On a basic level, a classification system should distinguish a cat from a goldfish.

Classification systems establish groupings about which generalizations can be made. Generalization is needed because "the primary objective of classification is to provide the foundation for all comparative studies - with the best classification being the one that permits the most useful comparative investigations." (Bock, 1973, p. 379) An objective of a classification system would be that at some level it groups a cat with a mountain lion.



A third objective of classification is that it be useful in identification. Identification can be defined as the procedure of assigning entities to existing categories of an existing classification scheme. As will be discussed later, classification schemes should be adaptable enough to categorize currently unidentified entities. They must be able to stand the test of time if they are to be effective.

Finally, a classification system should serve as a convenient information storage and retrieval system. This function will facilitate the use and application of the generalizations made from comparative studies.

### **C. KEY ATTRIBUTES OF A CLASSIFICATION SYSTEM'S CATEGORIES**

For a classification system to achieve the four objectives of differentiation, generalization, identification, and information retrieval, its categories or taxa must possess certain attributes. These attributes include: a) mutual exclusivity, b) internal homogeneity, c) completeness, d) stability, and e) basis in relevant language or names (Chrisman, 1988, p. 416).

In order to effectively differentiate between sets of entities being classified, the categories in the classification scheme should be mutually exclusive. The desire for the categories within a classification system to be mutually exclusive means that categories should not overlap. It should not be possible to assign a particular entity to more than one

category. This characteristic allows researchers to distinguish between categories and analyze relationships based on those distinctions. Two categories of kitchen appliances that are mutually exclusive would be appliances that cook food and appliances that preserve food. No kitchen appliance can be assigned to both categories. Differences one would note in the two categories include the fact that one type of appliance usually applies heat while the other removes heat. One category uses either gas or electricity while the other uses only electricity.

Categories should be internally homogeneous. Members of a particular category should be more similar to other members of the same category than they are to members of other categories. This feature is necessary if valid generalizations and comparisons are to be made within the category. Both microwave and conventional ovens fall within the category of ovens. As such, they have certain similarities, certain features in common. Generalizations can be made that apply to each. Both heat food. Both consume energy. Parameters that must be set with each include the length of time food is cooked and the intensity level at which the food is cooked. They are more similar to one another than dishwashers which would fall into another category of kitchen appliances.

All categories considered together should possess the element of completeness. They should be collectively exhaustive. Every known entity must belong to an existing taxon or the classification system

would be incomplete. In fact, a characteristic of an exceptional taxonomy would be completeness so encompassing that it possesses the capacity to place entities as yet unknown. Kitchen appliances could be categorized by their source of power. Categories would include gas, electricity (AC or DC), or human energy. Future categories might include solar power, nuclear power, or hydraulics. Whatever the final categories chosen, they should accommodate assignment of all existing kitchen appliances.

Taxa should be stable. If a classification system is properly developed and its categories well conceived, reassignment of an entity to another taxa should not be possible unless changes occur within the entity itself. Consider the example of a classification scheme for management philosophies. The philosophies of several companies in 1980 might have been Management by Objectives (MBO). In 1985, Total Quality Management (TQM) arrived as a management philosophy. If MBO were a stable category of management philosophies, the companies classified as MBO practitioners would not shift to the new category of TQM. The only way they should shift in taxa from MBO to TQM would be if the characteristics of their management philosophies in fact changed.

Categories are usually defined by a single or small group of dominant characteristics. Assignment of entities to categories is made easier if the names of the categories have some basis in relevant

language. Retrieval of information is also eased if the category names bear some relation to the type of elements they contain. The name of the category should be somewhat descriptive and should embody or be closely associated with the key distinguishing characteristic which defines the category. In our kitchen appliance example of classification based on the type of power source, good category descriptions would be gas powered or electrically powered or manually operated. The category names describe the dominant characteristic driving the classification.

#### **D. KEY ATTRIBUTES OF A CLASSIFICATION SYSTEM**

It is not the categories of a classification system alone that should possess particular attributes. The classification scheme itself should be a) based on the key attributes of the entities being classified, b) general rather than special purpose, c) parsimonious, d) hierarchical in nature, and e) timeless (Chrisman, 1988, p. 417).

In order for a classification system to be effective, it should use the key characteristics of its entities as a basis. The most useful characteristics measure the important similarities and differences used to distinguish entities from one another. A zoological classification system is likely to be based on the key physical and genetic characteristics of animals. Although a system based on physical and genetic characteristics would not be very effective for classifying contracting literature, there will be key characteristics of the literature that will be useful for differentiation.

Classification systems may be either general or special. Special classifications focus on only one or two attributes of the entities. Examples of special classifications would be big or small, young or old, profit or not-for-profit. Special classification systems are useful, but only when one is interested solely in the particular key attributes applied. Because of their narrow focus, special classifications are not well suited for information retrieval (McKelvey, 1978, p. 1429). For purposes of classifying contracting literature, it would be difficult to retrieve all that has been written on Congressional legislation if the contracting literature is stored in terms of a wide variety of special classifications and Congressional legislation is not one of them.

General classification schemes, on the other hand, group objects together according to all their attributes even though some may be weighted more than others as is the case of key characteristics. A general classification permits broad predictions to be made about the members of its taxa.

The strengths of a general classification system are (McKelvey, 1978, p. 1430):

- It provides a much more inclusive information retrieval system organized by relatively parsimonious sets of classes.
- It presents a conceptual framework for describing the diversity of presently existing literature.
- It provides a classification scheme useful in other areas of contracting investigation.

A third attribute desired of the classification system itself is parsimony. Parsimony in classification is achieved when a researcher is able to group similar items and differentiate others with the fewest number of categories possible. This goal must not be achieved at the expense of other classification attributes. With parsimony, information retrieval and identification will be facilitated since there are fewer avenues the researcher must explore. At the extremes, each entity could constitute its own category or all entities could reside in one category. Systems at these extremes would provide no value in classification. The former provides the ultimate degree of differentiation and the latter provides the ultimate degree of generalization. However, the first contributes nothing to generalization while the second completely neglects differentiation. Parsimony is the state where the optimum number of categories exists. There are enough to provide differentiation and not too many to the detriment of generalization, identification, and storage and retrieval.

A hierarchical classification system is one with several levels. The value of a hierarchical system is that the hierarchy relates a number of different taxa at higher levels depending on their degree of similarity. A hierarchy at one level separates different categories of entities but at a higher level integrates the categories in light of the fact that they are common members of a larger, less narrowly defined group. The fact that a hierarchy demonstrates relationships between categories is quite

valuable in allowing researchers to make comparisons of the categories. Two animals may belong to different species but the same genus. This hierarchical classification system shows that they are different but related.

Finally, it is important to note that the foundation of the classification system should be timeless. The zoological system should be useful in classifying both past and future animals - dinosaurs as reptiles, for example. A system to classify contracting literature should not be locked into types of literature drafted at the present time only.

#### **E. EXISTING TAXONOMIES**

Numerous taxonomies were discovered during this research effort. These included classifications of organizations and classifications of business strategies. Though the classification schemes in these areas were not useful in terms of determining categories for this effort, they were useful in establishing the methodology for developing the contracting literature taxonomy. This research effort has been successful in identifying only one existing system for the classification of literature (other than the traditional classification by subject matter). The system was developed by Alvin J. Williams and A. Ben Oumlil. Their classification system was published in the Journal of Purchasing and Materials Management (Fall, 1987). They applied their system to the articles appearing in the Journal of Purchasing and Materials Management (JPMM) for the period 1965-1987. This section of the

thesis will describe the elements of their classification system and then evaluate that system according to the attributes of the optimal system.

### **1. Description of Williams/Oumlil Classification System**

Williams and Oumlil presented a classification system in their article, not a taxonomy. They categorized articles in the JPMM but did not address the underlying thought used to develop the system. A summary of the application of the Williams/Oumlil model to articles in the JPMM is included as Table I.

Williams/Oumlil first categorized the JPMM articles as 1) theoretical/conceptual, 2) managerial/practical, 3) case histories, or 4) purchasing education/professionalism. These categories were then subdivided into normative and positive. Each article was then assigned to one of eight blocks in the matrix. A description of the categories follows.

An article was described as theoretical/conceptual if it had as its "primary focus the elaboration or development of some principle or idea with potential applicability to the discipline of purchasing." (Williams, 1988, p. 25) Articles in this category fit Rudner's definition of a theory:

A systematically related set of statements, including some lawlike generalizations, that is empirically testable. The purpose of theory is to increase scientific understanding through a systematized structure capable of both explaining and predicting phenomena. (Rudner, 1966, p. 36)



**TABLE I RESULTS OF WILLIAMS/OUMLIL CLASSIFICATION**

| Classification of JPMM Articles by Type<br>(Volumes 1-22) |                            |                            |                            |
|---|----------------------------|----------------------------|----------------------------|
|   | Normative                  | Positive                   | Total                      |
| Theoretical/<br>Conceptual                                | 179<br>Articles<br>(37.9%) | 45<br>Articles<br>(9.5%)   | 224<br>Articles<br>(47.4%) |
| Managerial/<br>Practical                                  | 90<br>Articles<br>(19.1%)  | 69<br>Articles<br>(14.6%)  | 159<br>Articles<br>(33.7%) |
| Case Histories  | 5<br>Articles<br>(1.1%)    | 36<br>Articles<br>(7.6%)   | 41<br>Articles<br>(8.7%)   |
| Professionalism/<br>Education                             | 31<br>Articles<br>(6.6%)   | 17<br>Articles<br>(3.6%)   | 48<br>Articles<br>(10.2%)  |
| Total   | 305<br>Articles<br>(64.7%) | 167<br>Articles<br>(35.3%) | 472<br>Articles<br>(100%)  |

Adapted from Williams/Oumlil, Journal of Purchasing and Materials Management, Fall 1987, p. 25.

An article was defined as managerial/practical if it explored or developed applications of basic concepts. Articles in this category would have more practical application to the work of purchasing managers. "The applicability of the concepts discussed in these articles is more immediate and usually more straightforward than is the case with those in the theoretical category." (Williams, 1988, p. 25)

The case history category covered articles analyzing purchasing activities in particular industries or product/service areas. They cover

a very narrow area in great depth. They are neither theoretical nor practical, but more descriptive in nature. Examples cited included purchasing in the steel industry, in banking, and in hospitals.

The final category Williams/Oumlil included was the education/professionalism category. These articles addressed such issues as continuing education, seminars, certification, and academic offerings in purchasing and related areas. "The key emphasis is on areas that improve or enhance the position of purchasing personnel and the profession as a whole."(Williams, 1988, p. 25)

Each of these categories was then subdivided into normative and positive. Normative refers to a prescription of what should be while positive refers to a description of things as they currently exist. Normative articles would seek to prescribe the activities individuals and organizations should be performing. Positive articles would seek to describe the duties and functions of individuals and organizations, in order to explain and predict their activities.

Additionally, Williams/Oumlil categorized their articles by subject matter according to headings from leading textbooks in the purchasing and materials management field. That phase of effort is beyond the scope of this thesis and not an integral part of the classification scheme.

## **2. Evaluation of the Williams/Oumlil Classification System**

The JPMM literature scheme developed by Williams and Oumlil satisfies many of the characteristics of an effective classification system. This subsection evaluates the Williams/Oumlil system in light of the key characteristics of classification schemes and the categories within them detailed earlier in this thesis.

### ***a. Conformance With Desired Attributes of Categories***

Categories should be mutually exclusive. In the Williams/Oumlil system, the categories themselves appear mutually exclusive, but the nature of the literature being classified is such that it can, in some cases, be assigned to more than one category. For example, an article could be descriptive of some process to give the reader insight into the manner in which the system works. This could be merely setting the framework to present a prescription for the manner in which the author believes the process should function. Should this article be classified as positive or normative in the Williams/Oumlil system? There is an argument for both, and therefore the categories are not mutually exclusive.

Categories should be internally homogeneous. Since the categories in this system are not mutually exclusive, the entities within a single category are not guaranteed to be homogeneous. In the example above, the article which is both positive and normative will be assigned to a category with other articles that are completely positive

or completely normative. For that reason, these categories will not be entirely homogeneous.

Categories should have the element of completeness or be collectively exhaustive. There should be no article that cannot be assigned to a category. The Williams/Oumlil system seems to meet the completeness requirement. This researcher could not conceive of a type of article that would not fit into one of these categories.

The categories should be stable. Though assignment of literature to a particular category within the system can be quite subjective, this is not an indication that the system is not stable. The test of stability is whether articles currently assigned to a category would be likely to be switched to another category if a new category were established. In the Williams/Oumlil system, a category could be established as an alternative to positive and normative. The new category could be a combination of positive and normative aspects in a single article. This would necessitate moving hybrid articles currently classified as positive or normative into the newly established category. The Williams/Oumlil system is not stable. By their nature and the subjectivity involved in classifying literature, it appears that most systems for classifying literature will not be particularly stable.

Categories should have relevant names. The categories in this classification system do have names that describe the key identifying characteristic of the entities in the categories. Practical and theoretical,

case histories and purchasing education/professionalism are quite descriptive of the type of articles assigned to these categories. Information retrieval for the user of the Williams/Oumlil system will be easier because of the relevancy of the category names.

***b. Conformance With Desired Attributes of Classification Systems***

The classification system should be based on the key characteristics of the entities being categorized. Williams and Oumlil did use key characteristics of purchasing literature to classify the literature. Of course, they used characteristics that they themselves deemed important. The same characteristics might not be as important to other researchers, but those chosen by Williams and Oumlil are unquestionably relevant and significant.

The system should be general purpose rather than special if it is to be of use for other than very narrow purposes. This system is general. It is not limited to one particular key attribute. It does not focus on a very restricted area of purchasing literature or discriminate among articles based on a specific issue.

The classification scheme should be parsimonious. It should employ a minimum of categories to accomplish its goal. The Williams/Oumlil system does have parsimony. It uses a relatively small number of categories but still manages to differentiate between the various types of purchasing literature. The authors are able to use the

system effectively to classify the literature and the system allows them to draw useful conclusions. It could probably become more parsimonious with the elimination of the case histories category. It would seem that articles classified as case histories could as easily have been assigned to the theoretical or practical categories.

The system should be hierarchical to demonstrate relationships between categories at different levels. The Williams/Oumlil system is not hierarchical. It is flat. There is only one level. However, it does not appear this system was designed with the intent of showing relationships between various categories at different levels.

The classification system should be timeless. This system appears as if it could stand the test of time. None of the categories are based on a new concept that might not endure. None of the categories even seem related to time nor would they be affected by the passage of time.

### **c. Overall Assessment**

Analysis of the Williams/Oumlil classification system finds that it meets most of the criteria of the optimal classification scheme detailed earlier. Its categories are complete and labeled with relevant names. The system itself is based on key characteristics of the literature it classifies. It is general purpose, parsimonious, and timeless. The areas in which it is weak are that its categories are not mutually exclusive. Recall that literature could conceivably be categorized as

positive, normative, or possibly both. Additionally, this flaw resulted in the determination that the categories were not homogeneous or stable. Finally, the system is not hierarchical.

Overall, the Williams/Oumlil system is a good system that can be even better with some minor adjustments. It is a useful system in terms of modifying it as a tool for classifying contracting literature.

## **F. A TAXONOMY FOR CONTRACTING LITERATURE**

### **1. Development of the Classification System**

The types of literature in the field of purchasing and materials management are similar to those in the contracting field. This is due in a large part to the fact that the fields themselves are so closely related. Therefore, the development of a classification system for contracting literature will have as its base several elements of the Williams/Oumlil system for classifying literature in the purchasing and materials management field.

The first step in developing a contracting literature taxonomy was to examine the basic categories of the Williams/Oumlil classification scheme for application to contracting literature. The basic categories included theoretical, practical, case histories, and professionalism/education. In an optimal system, the categories are supposed to be mutually exclusive, homogeneous, complete, stable, and labeled with relevant names. They are to support a general purpose, parsimonious, hierarchical, and timeless classification scheme based on

key characteristics of the literature. As stated previously, the Williams/Oumlil system failed to meet the objectives of being mutually exclusive, homogeneous, stable, and hierarchical. It was within this context that the researcher evaluated the usefulness of the Williams/Oumlil classification system with regards to contracting literature.

Three of Williams/Oumlil's categories were retained in the contracting literature taxonomy. These were the theoretical, practical, and professionalism/education categories. The fourth category, case histories, was rejected. The researcher reasoned that case history articles could also be categorized as either theoretical or practical. The elimination of this category would improve the contracting literature system's parsimony without jeopardizing its objective of completeness.

Williams and Oumlil defined case histories as those articles which analyzed purchasing activities in certain industries or product/service areas. The fact that an article focuses on purchasing or contracting in a particular industry as opposed to the entire field is not sufficient reason to establish an entire category. There is no great benefit derived from identification of this specific type of article and there is a cost incurred. While it does not provide much additional information of value to an analyst, establishment of the case histories category detracts from the parsimony objective. It requires more categories when fewer will suffice. If case histories were eliminated as



a category, the completeness objective would still be met since articles in that category could be assigned to the theoretical or practical categories.

The other three categories do provide value to justify their retention. The distinction between theoretical and practical should indicate where most of the literature is directed--at managers for immediate use or toward exploring concepts with more esoteric, longer term value. This can provide scholars with information on where the majority of past efforts have been directed and areas in need of further exploration.

The professionalism/education category is a necessary one. Articles in this realm do not fit into the theoretical or practical categories. To force them into either of those categories would hinder the homogeneity within those categories. However, the category is necessary because without it, the completeness objective would not be met. There are articles which are not theoretical or conceptual in nature, but at the same time are also not essential tools routinely required by the contracting officer. For example, an article on certification as a Certified Professional Contracts Manager (CPCM) would fit into the professionalism/education category. It is not theoretical and it is not of immediate use to a contracting officer. However, it has value in the professional development of individuals and would fit into this category.

The inclusion of this category, in conjunction with the theoretical and practical categories, enables the contracting literature classification system to be complete or collectively exhaustive. Therefore, the contracting literature taxonomy includes only three basic categories: theoretical/conceptual, managerial/practical, and professional/education.

After deciding on the basic categories, the researcher next reviewed discriminators within those categories. In an attempt to delimit the boundaries of the purchasing/materials management discipline, Williams and Oumlil subdivided their basic categories into positive and normative. The distinction between positive and normative indicates the nature of the article to interested researchers. The value of this distinction is that it allows one to determine if literature focuses primarily on a description of processes or systems (positive) or on a prescription of what organizations or individuals should be engaged in (normative). Though these two divisions are useful, the researcher felt a contracting literature system should also address two additional key characteristics--whether or not an article was substantiated by empirical data and the type of logic employed by the author of the article. The distinction between empirical and non-empirical concerns the author's basis for analysis. Classification by types of logic the author employs indicates the author's approach to reaching conclusions.

The first key characteristic was determining if the articles had their basis in empirical or non-empirical evidence. Empirical evidence

is defined as evidence gathered through observation or experimentation. Such evidence is usually statistical in nature. Articles based on empirical evidence are more convincing and better documented. Articles based on non-empirical evidence are generally more subjective and often based on personal opinion. An analyst of contracting literature would be quite interested in determining the volume of literature that is supported by solid evidence. An absence of this type of support would indicate heavy reliance on opinion or expert judgment, and a need for more analytical precision in contracting literature.

The second addition this researcher made to the Williams/Oumlil system was a distinction between types of logic an author employed in arriving at a conclusion. The categories included the use of inductive logic, deductive logic, or no particular logic demonstrated in arriving at a conclusion. Inductive logic is reasoning from the specific to the general or developing a conclusion about the whole by examining specific members of the whole. Deductive logic is reasoning from the general to the specific or developing a conclusion about the members of a group from a premise about the whole group. Information on the logic employed by authors is important to scholars for several reasons. First, it would indicate whether authors of contracting literature employ logic or reasoning to develop their arguments or assertions. In developing a position or stating an opinion, some type of logic is usually employed. Assignment of an article to the

"no particular logic" category does not necessarily indicate that the article is illogical or has no basis whatsoever. "No particular logic" means that the author does not rely heavily on an inductive or deductive line of reasoning to support or in arriving at his conclusions. An author could prescribe some change based on his experience in the field. Such an article would be assigned to the "no particular logic" category, though the recommendation could be quite valid based on the author's personal experience. However, use of some type of logic would certainly lend credence to an article. Should scholars note a lack of empirical or logical support, they should note potential weaknesses and provide guidance on the problem to the community. Also, discerning inductive from deductive logic gives greater insight into how writers in the contracting community tend to develop and support their positions.

Finally, this researcher examined alternatives to strengthen the weaknesses of the Williams/Oumlil system. Specific areas identified for improvement were problems with mutual exclusivity and stability. While retaining the positive/normative discriminator, a means had to be determined to deal with those articles which contain elements of both description and prescription. Two alternatives were identified. A new category could be established to account for these articles, a "combination" category. The nature of the articles would then be classified as descriptive (positive), prescriptive (normative), or a hybrid containing both (combination). The other alternative would be more

subjective in nature. It would involve classifying an article containing both positive and normative elements as one or the other depending on the classifier's perception of the thrust of the article. For example, if an author describes a system or process as it currently exists to provide a framework for prescribing improvements, the article would be classified as prescriptive. Though the article may have contained descriptive elements, its true purpose was to prescribe improvements. The actual volume of description may be greater than that of prescription, but the purpose or thrust of the article was prescriptive in nature. Therefore, the article would be described as normative or prescriptive.

The latter alternative requires a great deal more judgment on the part of the classifier, but it results in a better system. To establish a "combination" category would actually decrease the amount of differentiation provided by the system. The classifier would probably have to place the majority of articles into this category and the discrimination between an article that is truly descriptive from one that is truly prescriptive would be lost. For that reason, the classification scheme for contracting literature will forego establishment of a combination category and rely more heavily on the judgment of the classifier.

## **2. Description of the Contracting Literature Taxonomy**

As developed above, the contracting literature taxonomy contains three basic categories on its vertical axis--

theoretical/conceptual, managerial/practical, and professional/education. Each of these categories is subdivided on three levels. The elementary division according to the nature of the article is between positive and normative. Each of these divisions is subdivided into empirical and non-empirical as indicators of the authors' basis for analysis. Finally, each of those subdivisions is further subdivided into inductive, deductive, and no particular logic according to the authors' approaches to reaching conclusions. Effectively, an article can thus be assigned to one of thirty-six categories. The contracting literature taxonomy appears graphically in Figure 2-1.

### **3. Evaluation of the Contracting Literature Taxonomy**

#### ***a. Conformance With Desired Attributes of Categories***

Recall that categories in the optimal classification system should be mutually exclusive, internally homogeneous, complete, stable, and have their basis in relevant language or names.

The contracting literature taxonomy addresses some of the perceived shortcomings of the Williams/Oumlil system. The categories in the Williams/Oumlil system were not deemed to be mutually exclusive. This was based on the fact that an article could be both positive and normative. The solution proposed in the contracting literature taxonomy was to rely upon the classifier's subjective assignment of articles based on his perception of the thrust of the article.

| Nature of Article                      | Normative (Prescriptive)         |                                  |                                |                                  |                                  |                                | Positive (Descriptive)           |                                  |                                |                                  |                                  |                                |
|--|----------------------------------|----------------------------------|--------------------------------|----------------------------------|----------------------------------|--------------------------------|----------------------------------|----------------------------------|--------------------------------|----------------------------------|----------------------------------|--------------------------------|
|  | Empirical                        |                                  |                                | Non-Empirical                    |                                  |                                | Empirical                        |                                  |                                | Non-Empirical                    |                                  |                                |
|  | Induc-<br>tive<br>Reason-<br>ing | Deduc-<br>tive<br>Reason-<br>ing | No<br>Par-<br>ticular<br>Logic | Induc-<br>tive<br>Reason-<br>ing | Deduc-<br>tive<br>Reason-<br>ing | No<br>Par-<br>ticular<br>Logic | Induc-<br>tive<br>Reason-<br>ing | Deduc-<br>tive<br>Reason-<br>ing | No<br>Par-<br>ticular<br>Logic | Induc-<br>tive<br>Reason-<br>ing | Deduc-<br>tive<br>Reason-<br>ing | No<br>Par-<br>ticular<br>Logic |
| Approach to<br>Reaching<br>Conclusions |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |
| Theoretical/<br>Conceptual             |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |
| Practical/<br>Managerial               |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |
| Professional/<br>Education             |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |
| Total                                  |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |                                  |                                  |                                |

Source: Researcher's Analysis

Figure 2-1

## Contracting Literature Taxonomy

Based on assignment according to the thrust of the article, the categories should be internally homogeneous as well as mutually exclusive. The purpose of all the articles in the normative category should be prescriptive while the purpose of all the articles in the positive category should be description.

Despite elimination of the case histories category, the contracting literature taxonomy should be every bit as complete as the Williams/Oumlil classification scheme. Those articles assigned to the case histories category would be designated either theoretical or practical in the contracting literature taxonomy.

The Williams/Oumlil system was judged unstable. This was based on the fact that an article could be both normative and positive. The solution proposed by this contracting classification enables the system to be more stable.

Finally, the categories in this classification scheme are labeled with relevant names.

***b. Conformance With Desired Attributes of Classification Systems***

Recall that the optimal classification system should be based on key attributes of the entities it seeks to categorize. It should also be general, parsimonious, hierarchical, and timeless.



The contracting literature taxonomy focuses on several key characteristics not identified in the Williams/Oumlil system. These included whether or not empirical evidence was presented in an article and what type of logic was employed to develop a position. These key characteristics should aid scholars in their analysis of the types of literature prevalent in the contracting community. It is therefore fair to state that this system is based on the key characteristics of contracting literature.

As the Williams/Oumlil system was determined to be of general purpose, so is this system. It is not limited to one particular key attribute. It does not focus on a very restricted area of contracting literature or discriminate among articles based on a specific issue.

With the exception of the case histories category, the Williams/Oumlil system was determined to be parsimonious. The contracting literature system eliminated that category, improving the parsimony of the system. However, several categories focusing on empiricism and logic were added. This resulted in an increase in the number of possible categories from eight to thirty-six. Though the number of possible categories increased, there was a corresponding improvement in the ability of the system to differentiate between various types of literature as defined by the new key characteristics. Therefore, though the number of categories increased, the contracting literature classification system is still parsimonious.

The contracting literature taxonomy is hierarchical whereas the Williams/Oumlil system was not. The added levels of the contracting system resulted from subdividing positive and normative into positive empirical, positive non-empirical, normative empirical, and normative non-empirical. Each of these subdivisions was further subdivided according to the type of logic employed. For example, positive empirical was subdivided into positive empirical using inductive logic, positive empirical using deductive logic, and positive empirical using no particular logic. The hierarchy demonstrates the common elements in each of these lowest tier categories. Though they are separate categories, all share the characteristics that they are all empirical and they are all positive. The hierarchical structure is an improvement of the contracting literature taxonomy over the Williams/Oumlil system.

Finally, the contracting literature classification system should be timeless as was the Williams/Oumlil system. This system appears as if it could stand the test of time. None of the categories are based on a new concept that might not endure. None of the categories even seem related to time nor would they be affected by the passage of time.

### **c. Overall Assessment**

Development of a taxonomy for classifying contracting literature is a very subjective endeavor. This taxonomy drew from

another classification system for literature and hopefully made improvements. This is not intended to be the final effort. Adjustments and improvements should be made when this system ceases to serve the needs of the contracting community. As this effort and the ultimate classification of literature is subjective, there is no perfect system. However, this system does make improvements on a system judged to be a good one based on the attributes of the optimal system. Specific improvements include identification of additional key characteristics for classification (empirical basis, logic), an adjustment to make the categories in the system mutually exclusive, and conversion to a hierarchical system.

#### **G. SUMMARY**

This chapter enumerated the basic objectives of a classification system and described the desired attributes of the optimal classification system and its categories. It then described the Williams/Oumlil system for classifying purchasing and materials management literature and evaluated the system in light of the characteristics of the optimal system. The chapter concluded with the development and evaluation of a system for classifying contracting literature. The next chapter details the results of applying this new classification system to five years of contracting literature in the National Contract Management Journal.

### **III. FINDINGS**

#### **A. INTRODUCTION**

Once the contracting literature taxonomy was developed, it was applied to contracting articles contained in five years of the National Contract Management Journal from Summer 1984 through Winter 1989. This chapter details the problems the researcher encountered in the application and the degree to which the practical application of the taxonomy supported the researcher's evaluation of the proposed system in Chapter II. Finally, the chapter will analyze the information on contracting literature provided by the taxonomy.

#### **B. PROBLEMS ENCOUNTERED**

The researcher reviewed each article with several questions in mind.

The questions included the following:

- Is the article empirical? Is it based on some kind of random sample, extensive observation, or substantial use of statistical theory?
- Is the article descriptive (positive)? Does it explain or describe how some existing process works? Or is it prescriptive (normative)? Does it propose the way a process should work, how the design of some system/process should be changed to make it better?
- Does the author reason from specific cases to a statement or assertion about an entire group or class of things (inductive logic)? Or does the author describe how an entire class of things works and deduce from that that this particular item should thus operate in a similar manner (deductive logic)? Or does the author apply any type of logic at all? The article may be completely descriptive.

- Is the article about an intangible, conceptual, more abstract theory (theoretical)? Or is it more immediately useful, practical, and important to the routine functions of the manager (practical)?
- Does the article concern neither practical nor theoretical concepts, but rather professional areas such as certification, advancement, or educational issues (professional/education)?

With these questions as a guide, the researcher classified each of the sixty-seven articles.

The greatest problem identified by the researcher during the course of applying the classification system to the literature was the degree of subjectivity involved. It was difficult to make distinctions between several categories. The distinction between theoretical and practical at times blurred. Techniques for some managers might be theoretical while for other higher level managers, the same techniques might seem practical. For example, an article on determining profit policy would be considered theoretical by most individuals. However, to a senior DOD executive, the article might prove quite practical as a guide to determining what the policy should be. Such an article would be classified as theoretical in this study, but a case could be made to call it practical.

There were other articles where the distinction between theoretical and practical was less clear cut. The distinction between empirical and non-empirical could sometimes be blurred. The researcher did not consider an article merely quoting statistics as empirical. To be classified empirical, the data had to support the point the author was

trying to make; the thrust of his argument. Additionally, simply citing examples to support an opinion did not qualify an article to be labeled empirical. Examples without some probability or frequency of occurrence are not empirical data.

The difficulty sometimes encountered in distinguishing between prescriptive and descriptive articles was addressed earlier in this thesis. Articles often combined elements of both the normative and the positive. The researcher determined subjectively the true thrust or intent of the article and classified the work accordingly. Because elements of both prescription and description were often present in an article, the task of classification was often not an easy one.

Finally, determination of the type of logic employed in an article was often quite difficult. The researcher had to read an article thoroughly and then remove himself from the article to ponder the line of reasoning (if any) the author used to make his point. Determining the type of logic and even simply determining if inductive or deductive logic had been used by the author was almost never immediately evident.

In light of the difficulties sometimes encountered by the researcher in the actual classification, it was necessary to carefully consider the questions listed at the beginning of this chapter in reviewing most articles. Numerous reviews of the definitions of each category were also necessary when applying the classification scheme to the articles. Due

to the subjectivity involved in classifying contracting literature, it is unreasonable to assume that two people will assign a given article to the same category. Literature classification is extremely subjective. As Shaw describes it "...classification is an art, not a science."(Shaw, 1961, p.66)

### **C. APPLICATION OF THE CONTRACTING LITERATURE TAXONOMY**

Application of the taxonomy to contracting literature provided information on the literature published in the National Contract Management Journal over the five year period examined. The results of the classification are detailed in Figure 3-1.

None of the articles were classified as professional/education articles in the periodical over the given period. The National Contract Management Journal is not generally a forum for pieces on certification, educational opportunities, or advancement in contracting. These issues are most often found in publications such as Contract Management magazine. Though no articles in the area were reviewed in this study, the category of professional/education is a legitimate one based on existence of such works in the magazine.

The split between theoretical and practical articles was 60% (40 articles) classified as theoretical and 40% (27 articles) classified as practical. As the National Contract Management Journal is a scholarly periodical in contracting, the emphasis on the theoretical over the practical is not particularly surprising. Most of the literature published





in the periodical is focused on theoretical, abstract issues that are not of immediate application for the practitioner; the manager in the field. The literature is generally more of an academic nature. However, in light of the contention of the editor that the periodical is designed to be a practical aid to the manager, the heavy emphasis on articles classified as theoretical is surprising. It is possible that the periodical's audience is a higher level manager than envisioned by the researcher in his classification effort. As mentioned earlier, due to the subjectivity involved in classification, an individual at a senior level might perceive an article as practical while an individual at a lower level might consider the same article theoretical.

The researcher expected a large percentage of the articles classified as theoretical to fall into the normative or prescriptive category. After classification, only eighteen of the forty theoretical articles were categorized as normative. The majority of theoretical articles were classified as descriptive. This may be due to the fact that for an article to be classified as prescriptive, it must include some type of recommendation or method of improving the status quo. It may be true that the theories described in these articles were simply descriptions of the theories and not applications which would prescribe change.

In comparing positive to normative articles, 61% (41 articles) were classified as positive (descriptive) while 39% (26 articles) were classified as normative (prescriptive). The periodical is focused on education of

contracting personnel in its description of regulations, processes, and ideas. It is a forum for new thoughts, ideas, and proposals in its publication of normative articles. A possible explanation for the larger number of descriptive articles is the comparative ease with which this type of article can be written. While descriptive articles are quite valuable and may require a great deal of support, thought, and justification, they do not require development and presentation of valid solutions or recommendations for corrective measures. The prescriptive article is a bit more difficult to construct. In addition to support, thought, and justification, it requires formulation of a defensible recommendation for improvement. In the opinion of this researcher, the normative or prescriptive article is also more valuable because, if nothing else, it engenders creative thought and counterpoints.

Thirty-eight of the sixty-seven articles reviewed displayed some type of inductive or deductive logic in supporting conclusions. These types of logic were used most frequently in theoretical/conceptual articles. Of the thirty-eight articles exhibiting inductive or deductive logic, only seven were classified as practical. The remaining thirty-one articles displayed some use of inductive or deductive logic in support of theoretical or conceptual issues. When inductive or deductive logic was employed, more often than not, it was inductive. Articles employing inductive logic outnumbered those using deductive logic by a factor of almost two to one (twenty-five to thirteen). Authors of contracting literature reviewed

in this study tend to argue points from details of specific cases and then make general statements about a larger issue (inductive reasoning). For example, John Mulhern in his article "Item Nonavailability: What Are Its Causes?" details specific cases of apparent nonavailability not involving manufacturing declines as grounds to state his belief that DOD should focus on informational and behavioral causes as well as manufacturing issues.

Only six of the sixty-seven articles (9%) were considered empirically based. Of these, four were classified as positive and two were classified as normative. All of the empirical articles were classified as theoretical/conceptual. Use of empirical data in articles reviewed in this study was minimal. This type of support would be quite valuable, particularly in support of normative or prescriptive articles. For example, empirical data could strongly substantiate John Mulhern's prescription for increased emphasis on informational and behavioral causes of item nonavailability. Empirical data might indicate just how important a role these non-manufacturing issues play in causing nonavailability. Mulhern's argument would be much more persuasive with empirical data to support it.

As would be expected, the category which employed neither empirical nor logical basis was the positive or descriptive category. Simple description is a statement of the way things are and does not require a great deal of support to establish legitimacy. On the other

hand, normative or prescriptive articles would be expected to provide some sort of statistical or logical argument to support the recommendations of a new process or system. With the exception of two articles, all the normative pieces employed either some type of logic or empirical data to support the prescription.

#### **D. POST-APPLICATION CRITIQUE OF THE TAXONOMY**

This section will detail findings about the taxonomy resulting from its practical application to literature. Evaluation will consist of a post-application review of the taxonomy's conformance with the desired attributes of the optimal system. The categories of the taxonomy will be examined for mutual exclusivity, internal homogeneity, completeness, stability, and basis in relevant names. The classification system itself will then be examined for basis in key attributes, generality, parsimony, hierarchical nature, and timelessness. Several of these attributes are not tested by practical application of the taxonomy and they will be mentioned.

Though the categories of the classification system are mutually exclusive, there were articles which another individual could conceivably place in another category. Those issues of blurred distinctions were addressed earlier in this chapter. This is a problem inherent to the nature of the items being classified. The classifier must subjectively determine the primary purpose or thrust of the article and then place it in the appropriate category.

There were no articles that defied classification. There was a category into which each article fit adequately. From this observation, it appears that the completeness requirement of categories, the fact that the categories should be collectively exhaustive, is met by the system.

Articles were placed in only twelve of the thirty-six available categories. In order to make a good determination as to whether or not the categories in this classification system are internally homogeneous, a greater number of articles should be categorized. Since twenty-four of the thirty-six categories were not used, it is difficult to make a positive determination that articles in each category are more like each other than those in other categories. Based on the review of the articles in the twelve separate categories in this study, the categories appear internally homogeneous. The articles in each of the twelve categories resemble the other articles in the same category more than articles in other categories.

The optimal classification scheme's categories should possess the attribute of stability. Recall that the test of a category's stability was that if a new category had to be established to accommodate a recently discovered entity, entities already placed in a certain category would not migrate to the new category. In other words, to test a category's stability, the categories must fail the completeness test. There must be a need to establish a new category. In application to literature, the contracting literature taxonomy met the completeness test. Therefore,

application of the contracting literature taxonomy to the articles in the National Contract Management Journal did not test the attribute of stability. Practical application of a taxonomy neither supports nor challenges its stability.

The application of the taxonomy did test the attribute of basis in relevant names. The researcher did not discover any article that could be placed in a category that did not effectively describe the article. If the name of a category had to be changed during the application for that reason, the taxonomy would not have a basis in relevant names. For example, the "no particular logic" category could have been called the "no logic" category. During the application, the researcher could have identified an article that employed neither inductive nor deductive reasoning, but was still logical, possibly based on the experience or position of the author. Such an article would have to be assigned to the "no logic" category, and the category would actually be a misnomer. Since such a problem did not arise in the application of the contracting literature taxonomy, the researcher concludes that the categories have a basis in relevant names.

The optimal classification system itself should be based on key attributes of the entities being classified. One item that did occur to the researcher in the literature review as a potential key characteristic previously unidentified was support for positions in case law. Many articles in the descriptive or positive category, while not having an

empirical basis, did have basis in case law. In reading the articles, the researcher was unable to identify any other key characteristics with which to classify the literature.

The classification system should also be general rather than special purpose. This classification system is general purpose because that is the way it was designed. It does not have a particularly narrow focus on only one or two attributes of an entity as a special classification system would. This trait was tested by the evaluation of the taxonomy's design in Chapter II. The characteristic of being general purpose was not and cannot be tested by practical application of the taxonomy.

The classification system should be parsimonious. It should adequately classify the entities with a minimal number of categories. After application of the classification scheme, the researcher contends that there is no area in which this system can be made more parsimonious. The fact that no articles were placed in the professional/education category is not an indication of lack of parsimony. There is a great deal of contracting literature that should rightfully be assigned to this category. The National Contract Management Journal does not happen to contain a great deal of this type of literature. The researcher is personally aware of other periodicals such as Contract Management magazine that contain this type of article. By applying the taxonomy to a larger body of knowledge,

the twenty-four unused categories will probably be utilized. However, some categories may be of little use. Empirical articles as defined by the researcher must use some type of empirical data in support of an assertion. Empirical evidence would most often be used as a basis for inductive logic, grounds to argue from specific to general statements. It seems unreasonable that one would find an empirical article not employing logic. If, after extensive application of the taxonomy to additional literature, the "empirical, no particular logic" category remains unused, the elimination of the category should be considered.

The classification system should be hierarchical. This system is hierarchical and that characteristic does provide some value in analysis of areas in which writing has been done and the types of support provided in these articles. Due to its hierarchical nature, the taxonomy highlighted the fact that there were forty articles classified as theoretical, that twenty-two of these were classified as positive (descriptive), that eighteen of these were classified as non-empirical, and that nine of these employed no particular logic. In a hierarchical system, a single category is more descriptive of its entities because that category is placed in the context of the entire classification system. It is related to the categories surrounding it. The hierarchy allows the researcher to analyze the classification information on several planes. In a hierarchical system, a researcher can choose to analyze information on a large scale or a small scale. He can focus on a comparison between normative and



positive literature or he can compare the use of empirical data and inductive logic in positive theoretical articles to that of normative theoretical articles.

Finally, the classification system should be timeless. It should not be limited in its ability to classify articles to types of articles published at the present time only. The system should classify articles twenty-five years from now as efficiently as it does today. A one time application such as performed in this study does not test such a feature in the taxonomy. The true test would be to perform a similar application to articles from 1960 and evaluate the efficiency of the classification system. Though the contracting literature taxonomy appears capable of standing the test of time, this instant application of the taxonomy to contracting literature did not challenge the timelessness of the system.

#### **E. SUMMARY**

This chapter described the application of the contracting literature taxonomy to five years of the National Contract Management Journal. The chapter detailed the problems the researcher encountered in the application and analyzed the information on contracting literature provided by the taxonomy. Finally, the chapter appraised the degree to which the practical application of the taxonomy supported the researcher's evaluation of the proposed system in Chapter II. The fourth and final chapter will present conclusions and recommendations as to

improvements to the taxonomy, information on contracting literature reviewed, and further research required.

## **IV. CONCLUSIONS AND RECOMMENDATIONS**

### **A. INTRODUCTION**

This chapter will present conclusions and recommendations from the research and render answers to the primary and subsidiary research questions. Finally, the chapter will provide recommendations for areas of further research.

### **B. CONCLUSIONS**

Several conclusions can be drawn from the research conducted in this study. First, it is possible to develop a taxonomy for contracting literature. There are effective and useful ways of classifying contracting literature aside from the standard subject, title, author systems. By providing information in a different form, by classifying literature from a different angle, classification systems can provide more information. The contracting literature taxonomy developed in this study demonstrated that fact by providing information on the focus of the literature and the reasoning supporting it.

There are key attributes of both the classification system and the categories within it that the optimal system should embody. One key attribute is that a taxonomy for contracting literature should focus on the needs of the user. The structure of the system should be such that the key characteristics by which entities are categorized are useful and

important to the user. The classification system developed in this effort focuses not only on the type of literature--positive or normative, but also on the support for the authors' assertions--the use of logic and/or empirical data. This system could be modified depending on the needs or desires of the user.

As detailed in Chapter III, the contracting literature taxonomy developed in this effort met most of the attributes required of the optimal system. The categories of this system are mutually exclusive, complete, internally homogeneous, stable, and based on relevant names. The system itself is based on key attributes of its entities, general purpose, hierarchical, and timeless. Its parsimony could be improved by eliminating several categories which provided marginal value (separate categories for both inductive and deductive logic). The fact that the system met most of the desired attributes does not mean that it cannot be improved upon.

A contracting literature taxonomy can be a useful tool to academicians in evaluating the types of literature already published as well as directing effort into neglected areas.

Finally, classification of literature is an extremely subjective endeavor. Actually categorizing articles proved to be one of the most difficult aspects of this effort. Classification is not a science.

### **C. RECOMMENDATIONS**

This researcher developed several recommendations resulting from the actual application of the classification scheme to the literature. One recommendation would be to apply the taxonomy to a greater breadth of literature. Further application would better test the validity of the taxonomy, particularly in relation to those categories not used in this study. A larger sample would also give a better statistical picture of where most contracting literature is focused and possibly indicate areas where additional effort is required. Additional contracting literature should include other publications, not simply expansion of the number of issues of National Contract Management Journal reviewed.

Another recommendation is to apply the taxonomy to literature over time. Reviewing the results of a time phased classification should present a picture of trends in the literature and detail the evolution of contracting literature as the contracting field develops and matures. Such an analysis should be informative to academics tracing the development of the contracting discipline and possibly plotting its future.

A further recommendation is development of a special classification system to evaluate some narrow areas of interest. While this effort would not be a part of the contracting literature taxonomy, it could almost be considered a subset of the taxonomy. Special categories would not be a part of the contracting literature taxonomy, but they would expand upon the information the general taxonomy provides.

Particular areas conducive to special taxonomies include classification according to National Contract Management Association Body of Knowledge modules, classification based on whether or not an article presents an analysis of Acts, statutes, board decisions, or case law, or classification according to discipline (accounting, finance, statistics, psychology, etc.). Based on the large volume of articles citing case law as their basis for analysis, the researcher even considered establishing a separate category for case law on a level with empirical and non-empirical. However, that idea was rejected upon consideration of the fact that other bases for analysis such as board decisions, statutes, and regulations would not be accommodated by such a category. Case law would not be an exhaustive category and would be more suited to analysis based in a special taxonomy.

As a result of the analysis of the information provided by the application of the taxonomy, the researcher also developed recommendations concerning the actual literature in the National Contract Management Journal. One recommendation is that more articles be supported by empirical research and analysis. Such analysis provides a sounder basis than logic alone and the empirical basis also lends credibility to the author's assertions. It should also be useful to the author in confirming his hypotheses or in giving him reason to question the hypotheses.

A second recommendation concerning the literature reviewed is that more attention be directed at the practitioner and be of a prescriptive or normative nature. This study classified only eight of sixty-seven articles as normative and practical. Eighteen were classified as normative and theoretical. Nineteen were classified as positive and practical. Twenty-two were classified as positive and theoretical. The purpose of the National Contract Management Journal is to provide practical direction and instruction to the manager. However, only twenty-seven of the sixty-seven articles were classified practical. More literature is needed in this area. The researcher also noted a dearth of prescriptive articles. Only twenty-six of the sixty-seven articles were classified as prescriptive. The researcher has already stated his preference for prescriptive articles and this study details a lack of this type of article. Based on the analysis, this researcher recommends emphasis be placed on producing more prescriptive practical articles.

#### **D. RESEARCH QUESTIONS**

This section provides responses to the research questions posed in Chapter I.

The primary research question this thesis sought to answer was:

- **How might a focused, organized, and logical classification of contracting literature be established?**

The most effective method identified to establish a classification system for contracting literature was to first establish the basic

objectives of the optimal classification system and describe the necessary attributes of both the system and its categories. The next step was to identify an existing scheme for classification of literature and evaluate it for conformance with the desired attributes of the optimal system. The final phase was to adopt the positive points of the existing scheme and modify it to meet the needs of the contracting community.

Subsidiary research questions included:

- **What are the key characteristics of a taxonomical structure that classifies and categorizes contracting literature?**

The key characteristics of the taxonomical structure for classifying contracting literature included the fact that to be effective, the system should be based on the key attributes of the entities being classified, it should be general rather than special purpose, it should be parsimonious, it should be hierarchical in nature, and it should be timeless. Key characteristics of the categories within an effective classification system are that the categories should be mutually exclusive, internally homogeneous, complete, stable, and have a basis in relevant names.

The key characteristics of the entities chosen as the foundation for the contracting literature taxonomy included whether the literature was theoretical, practical, or professional. They also included whether the literature was normative (prescriptive) or positive (descriptive). Within the normative and positive categories, an article would be classified empirical or non-empirical. As subcategories of empirical and non-



empirical, an article would be classified as using inductive logic, deductive logic, or using no particular logic.

- **What existing classification schemes can be legitimately applied to contracting literature?**

The only classification scheme identified in this study for categorizing literature was the Williams/Oumlil model developed to classify literature in the Journal of Purchasing and Materials Management. However, concepts embodied in other taxonomies were applied to the development of this taxonomy for contracting literature. Most significantly, the desired attributes of the optimal classification system and its categories were obtained from an article on classification of business strategies by James J. Chrisman, Charles W. Hofer, and William R. Boulton (Chrisman, 1988, pp. 416-417).

- **What would be the results of classifying the last five years of contracting literature in the National Contract Management Journal?**

The results of such a classification were detailed in Chapter III. Sixty-seven articles fell into twelve separate categories in the contracting literature taxonomy. No articles were classified in the professional/education category. Sixty percent of the articles were classified as theoretical while forty percent were classified as practical. Sixty-one percent of the articles were classified as positive while thirty-nine percent were classified as normative. Only nine percent of the articles were classified as using empirical methods. Fifty-seven percent of the articles were based on either inductive or deductive logic. Figure

3-1 provided a complete breakdown of the results of the classification effort.

- **What information can be gleaned from an analysis of the classification of this literature?**

Very little empirical support was provided in the literature reviewed in this study. The literature reviewed could be made much more credible with more statistical or empirical support.

The majority of the literature was theoretical as opposed to practical in nature. It was also more often than not descriptive. Articles of a prescriptive nature, though more difficult to develop and support, would, in the opinion of the researcher, be more valuable to the contracting community.

The majority of the literature employed either inductive or deductive logic in reaching conclusions. Of those, most used inductive logic or reasoning from specific cases to assertions about the general population. Most authors of contracting literature cite specific examples or cases that support their point and extrapolate those cases to apply to the entire range of the general population.

No articles over the period covered by the study could be classified as professional/education. The National Contract Management Journal does not appear to be the forum for such articles over this period.

## **E. RECOMMENDATIONS FOR FURTHER RESEARCH**

There are several areas related to this study which require further research. First, the taxonomy should be applied to a larger body of contracting literature if valid conclusions are to be drawn. Application of the taxonomy to five years of National Contract Management Journal articles provided the researcher with a good idea of the ease and effectiveness with which the classification system could be applied. However, the limited size of the sample categorized does not permit a researcher to draw valid conclusions concerning the focus of contracting literature. The taxonomy should be applied to other publications such as Contract Management magazine, and it should be applied over a greater time span than five years.

Additionally, a time phased analysis of the results of application of the taxonomy could yield interesting information. Academics might be interested in analysis of the changing focus of contracting literature over the course of many years. The researcher would expect the focus of professional publications to change as the contracting field evolves over time. Another effort might be to apply the taxonomy to three or five year periods of literature over the course of the existence of the contracting discipline. Subsequent comparison of the results of the classification between periods might detail certain aspects of the evolution of the field. Examination of the past might provide direction to take in the future.

Another recommendation for further research is development of a special classification system to evaluate some narrow areas of interest. Special categories would not be a part of the contracting literature taxonomy, but they would expand upon the information the general taxonomy provides. Particular areas conducive to special taxonomies include classification according to National Contract Management Association Body of Knowledge modules, classification based on whether or not an article presents an analysis of Acts, statutes, board decisions, or case law, or classification according to discipline (accounting, finance, statistics, psychology, etc.).

#### **F. SUMMARY**

This chapter presented conclusions and recommendations from the research and rendered answers to the primary and subsidiary research questions. Finally, the chapter provided recommendations for areas of further research.

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## **APPENDIX**

This section provides synopses of the sixty-seven articles categorized in the contracting literature taxonomy. The volume and issue numbers refer to the particular issue of the National Contract Management Journal in which the articles can be found. Articles are listed sequentially by the issue in which they appeared. At the end of each synopsis is its corresponding category label.

### **Volume 18, Summer 1984, Issue 1**

**"The Biennial Federal Budget: A Proposal for Better Government,"  
Phillip H. Miller and Jeffrey K. Reh, pp. 1-14.**

Since the late 18th century we have accepted budgeting in the Federal Government on an annual basis. Recently however, Congress' failure to pass all thirteen appropriation bills by the end of the fiscal year which they were intended to fund has resulted in the funding of all or part of the Government under continuing resolutions. The rush to pass the budget within twelve months has immediate harmful effects on budget goals and efficiency.

Among the problems that frantic rushing encourages is a negligence in reviewing and evaluating the programs included in the proposals. In addition, the continuing resolution process can threaten the life of a new or existing program. The inability of Congress to get the job done in a timely fashion also fuels the fire in the lack of public confidence.

This article proposes the institution of a biennial budget. According to the proponents, a biennial budget would a) allow more effective budgeting, b) alleviate the anxiety of the funds recipients, c) protect program continuity, and d) promote better managerial planning.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, DEDUCTIVE**

**"Multiyear Contract Cancellation Ceiling--An Alternative To Full Funding,"  
Maj. Gary L. Poleskey, USAF, pp. 15-21.**

Multiyear contracting fosters efficient ordering and production, enhances industry status in the financial markets, and promotes sound capital investment decisions. Most important, however, is that multiyear contracting reduces the cost of weapon system acquisition.

The multiyear contract cancellation ceiling is a major roadblock to multiyear contracting in DOD. If the military, the administration, or Congress decides to cancel a given program in the middle of a multiyear contract, the contract must be interrupted and the Government must settle a cancellation claim with the contractor within a contractually established dollar amount. Cancellation is tied to a budget decision for a specific fiscal year. It is not the same as a termination for the convenience of the Government which would not

be tied to the annual budget process and does not involve a previous agreement on the cost of the settlement.

The article discusses four funding alternatives available in multiyear contracting. These alternatives are: 1) full funding, 2) incremental funding, 3) expenditure funding of advance buys, and 4) phased funding.

The phased funding approach provides the answer to the problems of the contract cancellation ceiling since it ties the unfunded ceiling to multiyear investment items.

#### **THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE**

##### **"A New Look at Risk and Profitability in Defense Contracting," Willis R. Greer, Jr. and Shu S. Liao, pp. 23-30.**

There has been a great deal of debate over the profitability of DOD business. The Defense Procurement Circular (DPC) 76-3 revised the Weighted Guideline to increase potential profit and stimulate capital investment by contractors. The thought persists that DOD contractors earn excessive profits. It has also been argued that DPC 76-3 has been ineffective in inducing greater capital investment.

This article reviews profit theoretically and then describes an empirical test of the theory. The theory is that the "degree of capacity in use in the aerospace industry helps to determine the profitability of DOD business relative to commercial business."

The authors did an empirical test of their theory over twenty years of data. They found that Government contracting officers are able to use their bargaining power to advantage during lulls in industry capacity utilization.

The study showed that DOD business is not less risky than commercial. Management is more likely to prefer commercial work because the "volatility of returns to net worth is lower."

#### **THEORETICAL, POSITIVE, EMPIRICAL, INDUCTIVE**

##### **"IMIP Productivity Factor--Changing the Way DOD Does Business," Lt Col. Eugene E. Kluter, USAF, pp. 31-34.**

Defense contractors now need to be concerned with foreign defense capabilities to remain competitive for U.S. Government business. The DOD Industrial Modernization Incentives Program (IMIP) provides contract incentives to encourage industry to invest in capital equipment. The heart of the program is the agreement between DOD and the contractor to share in the savings generated by mutual investments in technology, capital investments, and labor.

"Protected sharing" is the incentive payment method under the IMIP program. Because of the complexity of and time required for the advance

agreement negotiations and understandings, DOD only executes the program with a few prime contractors. For the full potential of the IMIP program to be realized, it must be applied against a broader segment of the industrial base.

The F-16 Program Office and General Dynamics, on whose original Tech Mod program the IMIP program was founded, have designed a new concept to simplify implementation of the IMIP. The new approach is called the "Sharing Factor" approach.

The development and implementation of the IMIP productivity factor may enable us to expand the benefits we receive from the IMIP program.

PRACTICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE

**"Relaxing the Government's 'Firm Bid Rule' When Bids Have Been Extended: A Recommendation," Robert A. Farber, pp. 35-43.**

This article first explains the Firm Bid Rule. It then goes on to discuss instances where the contracting officer has requested extension from the contractors on the acceptance period of the bids. On occasion during the extension period, a firm has attempted to withdraw its bid and this has not been permitted.

The author recommends that when a contracting officer finds it necessary to request an extension of the offers the contractor be given a chance to withdraw his bid at any time prior to award. In other words, the requested extension period would be free from the Firm Bid Rule. The contractor is extending his risk when we ask for an extension with no reciprocal consideration from the Government. By enabling a contractor to withdraw his bid during the bid extension period the Government is lessening the risk borne by the contractor. The right to withdraw would be a fair exchange for the bidder's continued risk.

THEORETICAL, NORMATIVE, NON-EMPIRICAL, DEDUCTIVE

**"The Government's Duty to Communicate--An Expanding Obligation," Alan Gould, Robin Leonard, and Robert Gore, pp. 45-49.**

This article discusses two important doctrines--the doctrine of superior knowledge and the duty to communicate. The Government is required to disclose to the contractor any "superior knowledge" it has in its possession that would be necessary in the performance of the contract. This includes all information that it is not reasonable to expect the contractor to have. It is also the duty of the Government to communicate to the contractor "the fullest and most accurate information possible concerning the contract requirements."



It used to be that the Government's duty to disclose was limited to factual information. However, in the Automated Services Inc. case (ASI), the GSBGA expanded the duty to communicate to nonfactual opinions and views.

THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**Volume 18, Fall 1984, Issue 2**

**"Government Indemnification of Contractors: How Far Can You Go Under Public Law 85-804?" Richard A. Smith, pp. 1-18.**

The Government is a sovereign, it is exempted from suit unless it agrees to be sued. Government contractors, on the other hand, are not exempted from suit. Defense contractors want to be indemnified against losses arising out of suits connected with Federal programs. The DOD and Department of Justice are against indemnification agreements. They believe that the threat of suit motivates contractors to provide quality products. If the threat is removed, quality may be removed. The problem is that many of programs give rise to the possibility of very large claims.

The article tells the history of Public Law 85-804 which gives "broad discretion" to Federal agencies to offer indemnification to their contractors. The First War Powers Act, Title II provided contractors indemnification during World War II and the Korean conflict. Coverage at this point was for contractors who were threatened by enemy action or worked in a high risk environment. Later, the Price Anderson Act indemnified contractors in the nuclear industry. Public Law 85-804 was enacted in August of 1958. The Price Anderson Act and PL 85-804 stated that the U.S. would assume the risk of loss to the extent that commercial insurance was not reasonably available.

The Nixon Administration issued an Executive Order which limited the authority of PL 85-804. This modification said that any action taken under the law had to "facilitate the national defense" and the risk must be "unusually hazardous or nuclear in nature." These "tests" of the action are left to the discretion of the agency.

THEORETICAL, POSITIVE, NON-EMPIRICAL, INDUCTIVE

**"Managing a Solution to the Procurement Fraud Problem," Robert J. Kenney, Jr., pp. 19-27.**

Contractors need to develop management programs to promote compliance with procurement laws and the standards of conduct. According to the author, "antifraud" compliance is a management problem, not a legal one.

The article offers guidance on the following four topics in developing a compliance model:

- 1) legal consequences of non-compliance
- 2) proper objectives of a compliance program
- 3) preliminary steps in developing a program
- 4) the most important elements of a successful program

PRACTICAL, NORMATIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Confusion of Allowability and Allocability in the 'Pro Rata Share' Provision of FAR 31.203(c)," Aerospace Industry Association Cost Principles Task Group, pp. 29-35.**

This article discusses the conflict between the pro rata share provision of FAR 31.203(c) and CAS 405 as they pertain to unallowable costs. FAR 31.203(c) states that all items which can be included in an indirect cost base should bear a pro rata share of indirect costs regardless of their allowability. CAS 405, on the other hand, requires that unallowable costs be separated from allowable costs at the time they are declared unallowable. They would therefore not be burdened with indirect costs before they were disallowed.

The article argues for the deletion of the pro rata share concept in FAR 31.203(c). The two guidelines would then be consistent.

THEORETICAL, NORMATIVE, NON-EMPIRICAL, DEDUCTIVE

**"Defense Factory Modernization Needs New Contract Cost Accounting and Management Controls," MGen. Joseph H. Connolly, pp. 37-43.**

In order for U.S. manufacturing factories to stay competitive in the world market and in the DOD procurement field, they must modernize. Modernization will also mandate changes in accounting and management control systems. The major question is whether measurements used for reporting to the Government are relevant for managing and controlling the performance effectiveness of manufacturing in modern defense factories.

With the development of such technologies as the flexible manufacturing system (FMS), our accounting systems and measures of effectiveness will need revision. For example, accounting system measurements are based on direct labor. With the onset of FMS technology direct labor is reduced. The reduction in direct labor will cause manufacturing overhead to become higher as a ratio of direct labor cost. We need to develop or use different allocation bases. An example may be FMS operating hours.

THEORETICAL, NORMATIVE, NON-EMPIRICAL, DEDUCTIVE

**"Assessment of the Competitive Contractor Teaming Acquisition Strategy,"  
Paul M. Carrick, pp. 45-54.**

Competitive Contractor Teaming (CCT) is when two contractors compete for a share of each year's production buy after having cooperatively defeated competing teams for a full scale development contract and jointly developing a producible design. CCT was used in the Airborne Self-Protection Jamming (ASPJ) program of the Navy and Air Force. This seemed to be a superior method for introducing a second source.

The author contends that the ASPJ program probably would have been better suited for a sole source procurement. The author states that the CCT is most effective for technically stable products. The ASPJ program was an attempt to push radar technology to the very limits and therefore could not be considered technically stable.

The article continues by stating that the use of CCT can in many instances lead to higher prices. The price reduction seen in the short run in the FSD and initial production run contracts may be overcome in the long run.

THEORETICAL, POSITIVE, NON-EMPIRICAL, INDUCTIVE

**"Computer Software--Licensing in the Commercial and Government Environment," Sheryl A. Nudds, pp. 55-63.**

Software licensing is a way for a vendor to control the use of his software. A license is a contract by which the vendor grants to the buyer permission to use its software under certain conditions. There are currently two different ways to protect software--trade secret status or copyright. Software is not considered a "good" under the Uniform Commercial Code and therefore a vendor should not grant a standard commercial warranty.

To protect their assets in both the Government and commercial environment vendors are:

- 1) obtaining written acknowledgement from customers that the program being licensed is proprietary.
- 2) placing use restrictions within license agreements.
- 3) clarifying obligations pertaining to the software program through the use of warranties and warranty disclaimers.

PRACTICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE

**"The Small Business Sector: Defining and Reaffirming the Federal Role,"  
Congressman Parren J. Mitchell, pp. 1-4.**

The Congressman defended the value of small business to the U.S. economy. He cited several bills sponsored by himself to protect and strengthen small businesses.

The author detailed the value of small business to this country and accused the Reagan Administration of a calculated shut out of small business from Government procurement actions. He stated that ignorance of small businesses had engendered noncompetitiveness in the pursuit of Government contracts. He then attributed this anticompetitiveness as the cause for contract abuse and absurd charges to DOD for simple spare parts. The author closed by expressing the belief that SBA was a worthwhile organization and should not be abolished.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE**

**"An Overview of Small and Disadvantaged Business Contracting," Paul J. Seidman, pp. 5-20.**

The article first defined small businesses in terms of number of employees and gross sales based on industrial classifications. The author then outlined procedures for filing small business size challenges and solicitation size challenges. He also detailed the advantages afforded a small business, including set asides (traditional set asides, small purchase set asides, and the Small Business Innovation Research program), certificates of competency, special access to bid sets and specifications, and subcontracting requirements on large contracts to large businesses.

The author then detailed advantages of minority owned small businesses including the 8(a) program, SBA contract support for 8(a) firms, advance payments available, and business development expenses allowed some 8(a) firms.

The author concluded that opportunities exist for small businesses but PCO's prefer larger firms which are easier to work with and which often receive non-competitive awards. It is this type of situation that leads to abuse of the procurement system.

**PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC**

**"A Proposal for Restructuring the SBA: Reducing Its Contracting Role and Providing High Technology Assistance to Small Business," Richard J Lorette, H. Charles Walton, and David F. Dianich, pp. 21-32.**

The authors initially cited the high failure rate of new small businesses and pondered whether the current SBA programs build businesses or simply subsidize businesses otherwise destined to failure.

The authors proposed less protectionism and more education of small businesses. They proposed college programs for small business entrepreneurs, including classes on how to start businesses, how to operate them, marketing and promotional methods, and how to navigate the legal and regulatory environment of operating a small business. They wanted to expose small business managers to computers and management information systems. The goal was to make the businessmen competitive.

The authors closed by noting that the Small Business Act policy was to ensure that a fair proportion of Government contracts were placed with small businesses. However, the Act also stressed that the essence of the American economic system is free competition and this part of the charter is often ignored.

PRACTICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE

**"'Breakout'--The Mystery Unveiled," Donald P. Young, pp. 33-40.**

The article defined Breakout Procurement Center Representatives as advocates of competition in procurements. They identify sole source items and identify reasons items cannot be broken out for competitive procurement.

The author recounted the history of breakout efforts and the importance of breakouts--they improve competition and yield lower prices. Finally, the author identified and presented solutions to some common breakout problems: pre-qualification of additional sources, identification of additional sources, and availability of the technical data required to compete.

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Small Business and the Government Contract: Will Your Trade Secrets Stay Secret?," Irene M. Guimera, pp. 41-46.**

Though the title addressed small businesses contracting with the Government, the subject matter concerned all Government contractors. The article detailed concerns contractors have when trying to protect trade secrets and proprietary information when dealing with the Government.

The Government requires the contractor to provide a great deal of this information for negotiations and for logistics support at a later date. The author stated that Government contracting does not mean a contractor must

sacrifice all rights in trade secrets. The contractor should, however, understand what he must do to safeguard this information (e.g. stamping information proprietary, identifying data provided to the Government with limited rights, and considering use of an agreement called a predetermination of rights in data).

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"The New Bid Protest Remedies Created by the Competition in Contracting Act of 1984," George M. Coburn, pp. 47-60.**

The article summarized and compared GAO and GSBCA bid protest remedies under CICA. Under CICA, a GAO protest stopped performance if award had been made as of the time of protest. CICA also required GAO to provide a decision more quickly.

Protests to GSBCA with the advent of CICA resulted in temporary suspension of the Agency's delegation of procurement authority (DPA).

CICA also established new grounds for bid protest, including: failure to follow proper synopsis procedures, failure to seek full and open competition, and failure to comply with statutory restrictions on establishing bidder qualification requirements.

Based on the belief that CICA delegated executive powers to the legislative branch of the Government (in the form of the Comptroller General) and was thus unconstitutional, the executive did not abide by CICA bid protest rules until six months after they had become effective.

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"National Security and Economic Concerns of International Technology Transfer," James C. Savage III, pp. 61-73.**

Technology transfer has been a problem since the Philistines kept an iron smelting process secret from the twelve tribes of Israel.

The author stated that the United States is ahead of Russia in most technology. However, the Soviets save billions of dollars in research and development by using U.S. technology. Of the U.S. technology they obtain, seventy percent is stolen and thirty percent is obtained by legitimate means.

The technology transfer has not only military, but also economic consequences. The technology costs U.S. industry billions, but the return is diminished by the transfer. The author believed the solution was not to lock the technology away. The value of the technology would then disintegrate. It must be circulated and used so it can grow.

The article cited progress in control of technology transfer by the Reagan Administration. The Administration clamped down on arms sales to other

countries (a form of transfer), transfer of commercial technology, and more closely regulated scientific exchange. However, more progress is needed.

THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**Volume 19, Winter 1985, Issue 2**

**"The Decline of the Bid Protest Remedy in the Federal Courts Since the Federal Courts Improvement Act of 1982," George M. Coburn, pp. 1-9.**

This article analyzes the problems the language of the Federal Courts Improvement Act of 1982 caused relative to the jurisdiction of the U.S. Claims court to grant relief to disappointed bidders. The Act gave the Claims Court exclusive jurisdiction to grant judgments on any contract claim brought before the contract is awarded. The language of the Act raised a number of questions over not only the Claims Court jurisdiction but also of other courts, like the district courts.

The article does state that there seems to be no clear intent on the part of Congress to distinguish for jurisdictional purposes between pre-award and post-award protest or to confine the post-award protests to suits in the district courts. It also finds that the Act did not diminish the bid protest jurisdiction of the Federal district court in suits filed after contract award.

The article points out the need for legislative reform to provide clarifications to the jurisdictional questions. The article addresses proposed administration revision to the Act.

THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE

**"Five Ways to the Merits: Some Suggestions on Seeking Expeditious Resolution of Contract Dispute Litigation," Donald P. Arnavas, pp. 11-20.**

There are a number of different forums available for the adjudication of contractual disputes and disagreements. A backlog of cases is typical for all of the forums. The largest Board of Contract Appeals (BCA), the Armed Services Board of Contract Appeals (ASBCA) faces the rising number of cases at the same time the average amount of time consumed per case increases.

The article concentrates on the BCA appeal procedures and discusses the five principal methods available to contractors seeking review of the merits of their contract disputes.

The five methods of resolving disputes discussed are:

- 1) motion for summary judgement
- 2) decided "on the record"
- 3) expedited proceedings
- 4) accelerated proceedings
- 5) full hearing

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Government Access to Records and Personnel," James J. Gallagher and Janice Davis, pp. 21-30.**

The controversy over the scope of access granted to DCAA auditors has heated up since the creation of the DOD Inspector General (IG) position. The IG pressured DCAA auditors to demand complete unrestricted access to contractor records. If the contractors refused, the DCAA simply stopped payments to the contractor under cost-reimbursement contracts.

The article presents a review of contractual and statutory powers providing the means to compel contractors to provide cost records and access to personnel.

The article then discusses the main points in a Westinghouse case where Westinghouse defended against the DOD's subpoena mandating release of corporate work papers and internal audits and the contracting officer's disallowance of costs associated with the company's internal audit activity.

The authors provide a recommended plan for corporate managers to use to keep auditors within their legal rights. They provide a brief outline of their "government access management plan." The article concludes with an appendix outlining documents commonly requested and audits usually conducted by the Government.

PRACTICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE

**"The Access to Records Offensive: The DCAA as Investigator," Patrick D. Mirch, pp. 31-35.**

In this article, Mr. Mirch takes the Government's position and addresses the DCAA's access to records rights in its role as a financial advisor to the contracting officer. The author hopes to dispel any concerns about the DCAA auditor's role as an investigator.

The article defends the auditor's need to review internal audit records, including budgets, forecasts, and tax returns and SEC filings. He substantiates the need for floor checks and employee interviews by stating that labor mischarging is the number one reason for DCAA referrals to the Defense Criminal Investigative Service. The article lists remedies available to DCAA auditors who are denied access. The conclusion is that the auditor's job is



not that of an investigator but rather of reporting facts for further investigation.

PRACTICAL, POSITIVE, NON-EMPIRICAL, DEDUCTIVE

**"A Decision Analysis Framework for a Contractor-Operated In-Plant Store," Richard A. Reid, Carl F. Huth, and Dennis A. Roybal, pp. 37-47.**

Opportunities to contain costs and improve productivity in Government agencies may be available by contracting with private sector firms to operate in-plant common use commodity stores, IPS's (in-plant stores). The use of an IPS can produce significant cost savings in the areas of procuring, storing and issuing inventory.

The article presents a decision analysis framework for use in evaluating the feasibility of implementing the IPS concept at a Government facility. The four stages of the decision analysis framework are described. The viability of the IPS is illustrated by giving an example of an IPS at a R&D facility. Finally, the managerial implications associated with the decision framework are described.

THEORETICAL, POSITIVE, NON-EMPIRICAL, INDUCTIVE

**"The DOD's 'Rights in Technical Data and Computer Software' Clause," Maj. Jerome S. Gabig and Roger J. McAvoy, pp. 49-55.**

This article examines the DOD's "Rights in Technical Data and Computer Software" clause DFARS 52.227-7013. According to the article, this clause conflicts with the license agreements that are customarily used within the commercial sector of the software industry.

The article describes the four categories of data rights in the clause and gives a flow chart explanation for when each of the four is applicable.

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Return on Assets/Investment Considerations for Contract Managers," William D. Chisholm, pp. 57-66.**

The purpose of this article is to provide a list of factors and actions which may affect a company's Return on Assets (ROA) or Return on Investment (ROI) throughout the life cycle of the contract manager's activities. The article explores the opportunities which exist to directly influence profit from the proposal preparation stage to the contract closeout.

PRACTICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE

**"Congress and the Acquisition Process: Some Recommendations for Improvement," Colleen A. Preston, pp. 1-25.**

This article is an examination of the effects of Congressional legislation on the acquisition process. Ms. Peterson first reviews each of four acts of Congressional legislation. They are: 1) the Competition in Contracting Act, 2) the Defense Procurement Reform Act, 3) the Small Business and Federal Competition Enhancement Act and finally 4) the Defense Procurement Improvement Act. The purpose, implementation and problems of each are addressed. An analysis of Congressional intervention into the procurement process is presented. The author believes that although changes in the DOD acquisition policies were overdue, that it's now time to examine the impact of the changes.

The author concludes by making specific recommendations which would begin the process of disengaging Congress from the day to day management of the DOD and regulation of defense contractor performance.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, DEDUCTIVE**

**"Debarment, Suspension, and Present Responsibility," Brigadier General Norman R. Thorpe and Lieutenant Colonel Robert L. Schaefer, CPCM, pp. 27-34.**

It is not in the Government's best interest to refuse to contract with a responsible contractor or to contract with a nonresponsible contractor. The definition of responsibility includes not only the ability of the contractor to complete a contract successfully, but also the honesty and integrity of the contractor.

Debarment and suspension are both very serious actions. Debarring a contractor may equate to capital punishment for a business, affecting not only employment, but in some cases, the welfare of the entire community. This article discusses the causes for which a contractor may be debarred or suspended. It also addresses the burden of proof required for each. The article discusses the concept of "present responsibility".

The purpose of debarment and suspension is to protect the Government. It is discretionary. The review boards considering these cases have a broad amount of power and it is imperative that the debarring official use sound judgement on each case.

**PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC**

**"Limiting Cost Recovery: Significant Legislative and Regulatory Developments," Stephen D. Knight, pp. 35-47.**

The Fiscal Year 1986 DOD Authorization Act poses problems not only for the contractors but also for Government procurement personnel. The Act was drafted in response to well publicized charges of procurement abuse such as charging country club memberships to Government contracts.

The Act can be claimed as the major impetus behind sweeping changes in FAR cost principles. This article listed the Act's effects and the effects of other legislative and regulatory changes on the cost principles in FAR part 31.2. It also examines DCAA's expanded role in establishing overhead rates.

In light of the current scrutiny of the allowability of costs, the article also discusses pending fraud related legislation.

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"The Legislative Mandate to Revise the Cost Principles," Chester D. Taylor, Jr., pp. 49-53.**

This article is a discussion of Congressional involvement in the procurement process, specifically in the reform of cost principles. This involvement is based on the lack of trust Congress has in the DOD's ability to regulate and administer cost reimbursement issues.

THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Recovering IR&D/B&P Costs," Frank M. Alston, pp. 55-59.**

Contractors are limited in the amount of independent research and development (IR&D) and bid and proposal (B&P) costs they can recover in negotiated Federal contracts. This article discusses the difficulty in distinguishing between IR&D costs and costs associated with concurrent R&D contracts. Questions arise as to when exactly IR&D ends and production of a marketable product begins.

The article also addresses the difficulty of distinguishing between B&P costs and selling expenses.

THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"The Small Business Administration's Pilot Program: A Study in Frustration," John F. Magnotti, Jr., Ph.D., pp. 61-65.**

The article begins with a history of the creation of the Small Business Act and the SBA's Office of Minority Business Enterprise and the 8(a) program.

Public Law 95-507 which became law in October 1978 established a pilot program for the Army in which the SBA had increased authority over selecting requirements for the 8(a) program. Basically, in this program the SBA had exclusive unilateral authority to select and reserve any procurement requirement for use. The article gives a specific example of the failure of this program.

The author concludes that mandating programs like the 8(a) pilot and the 8(a) program itself will not work until we are successfully able to incentivize enthusiastic compliance by large companies.

THEORETICAL, POSITIVE, NON-EMPIRICAL, DEDUCTIVE

**"The Differing Site Conditions Clause: What Are 'Contract Indications'?", George D. Ruttinger, pp. 67-75.**

This article addresses the Differing Site Conditions Clause. The clause is primarily a risk allocation clause used in construction contracts to protect the contractor from unexpected site conditions. Basically, the clause provides for price adjustment in a contract if the contractor encounters "subsurface or latent physical conditions at the site which differ materially from those indicated in the contract " or if "unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract." The article primarily discusses the former case.

The author attempts to define by court citations those types of things that constitute contract indications for purposes of the clause. Addressed are physical data, design details, site investigations, and publicly available information.

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**Volume 20, Winter 1987, Issue 2**

**"The 'New Morality' Environment in Government Contracts," C. Stanley Dees, pp. 1-14.**

The author claimed the environment in Federal contracting was changing. More contractors were being debarred and suspended. There were more criminal investigations and prosecutions as well as more legislation to enhance the Government's ability to detect and punish procurement fraud. He cited three reasons: the growing deficit and the reduction in Federal spending, the growth of inspectors general and their need to justify their existence, and the growth of fraud or other improper activities by some contractors.

The author examined particular problem areas including materials management, labor mismanagement, defective pricing, product substitution, kickbacks, collusion, and conflicts of interest. He also examined the recent legislation enacted to prevent such problems, including the DOD 1986 Authorization Act, the Program Fraud Civil Remedies Act, the False Claims amendment Act, and the Anti-Kickback Enforcement Act of 1986.

Finally, the author addressed the use of contractor self governance recommended by the Packard Commission to prevent procurement fraud problems. This involved a firm establishing its own standards of conduct, conducting internal audits and performing the independent oversight function. The author concluded that contractor self governance was the only solution that would really work.

**THEORETICAL, POSITIVE, NON-EMPIRICAL, INDUCTIVE**

**"Ethics in Government Contracting: Putting Your House in Order," Rafael Mur, pp. 15-50.**

The author, Vice President and General Counsel for Grumman, described the evolution of the "Grumman Code of Business Conduct." In the article, he reviewed the DOD Inspector General document titled "Indicators of Fraud in Department of Defense Procurement" of 1984.

The author cited the key elements of a compliance program and the value of self governance. He also discussed the causes of Grumman's evolving Code of Business Conduct--increasing audits, changing regulations, and more frequent defective pricing cases. The Grumman code was included as an appendix.

**PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC**

**"An Economic Prescription for Defense Profit Policy," G. R. Simonson, pp. 51-66.**

There were three sections to this article. The author first described the existing DOD profit policy (cost based with partial incentive to invest in capital equipment). He maintained that since under weighted guidelines, the majority of profit is cost based and only a fourth is based on capital equipment investment, it does not make sense for a contractor to invest to improve production. That would ultimately reduce profit.

Second, the author measured profitability of defense production and compared it to that of durable goods production. He found that durable goods manufacturers employed 2.5 times as much facilities capital to sales as DOD firms. Further, the DOD ratio of facilities capital employed to sales was .129 while the ratio for durable goods manufacturers was .232. He concluded that not only had weighted guidelines profit policy resulted in excess profit rates

on capital, but it had also been unsuccessful in its attempt to increase investment in line with that of durable goods manufacturers.

The third section of the article recommended basing weighted guidelines profit one hundred percent on capital employed, thus eliminating cost based profit and truly encouraging new investment.

THEORETICAL, NORMATIVE, EMPIRICAL, INDUCTIVE

**"The Competition in Contracting Act--A Marketing Tool," John K. Callahan, Jr. and Dr. Carl Vest, pp. 67-78.**

At first glance CICA may appear to restrict the marketing efforts of contractors. Contact between Government and contractor personnel is severely restricted during certain stages of the buying process. However, closer inspection reveals many marketing opportunities under CICA.

There are three phases of the acquisition process--problem recognition, assignment of buying responsibility, and search for and choosing of a contractor. The phase most susceptible to political influence in the form of promotion (particularly personal selling) is the problem recognition phase. CICA seeks to foster competition based on merit focusing primarily on the final phase.

The CICA provision requiring that agencies use advance planning and market research before making purchases provides many new marketing opportunities. CICA also requires J&A's to justify non-competitive procurements. The J&A's require market surveys and this provides another marketing opportunity.

CICA put negotiation on an even footing with sealed bidding. In so doing, CICA allowed for consideration of factors other than price in source selection. This is another factor enhancing the use of marketing efforts to obtain award.

THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Cost and Pricing Data Defined: An Analysis of the Scope of Contractor Disclosure Requirements Pursuant to the Truth in Negotiations Act," Jeffrey A. Lovitky, pp. 79-86.**

The author described the submission requirements of the Truth in Negotiations Act with regard to cost and pricing data. He described what constitutes cost and pricing data in material, labor, and overhead categories.

The author then detailed defective pricing possibilities for defective cost and pricing data. He reviewed several case histories to illustrate defective pricing in material, labor, and indirect cost areas.

Finally, the author concluded by recommending contractors submit when in doubt as to whether something qualified as cost and pricing data.

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"An Evaluation of Federal Contract Set-Aside Goals in Reducing Socioeconomic Discrimination," Dennis E. Black, pp. 87-104.**

The author examined the policy of pursuit of socioeconomic goals through the Federal contracting process. He pointed out the inefficiency: dollars could be better spent and procurement would be easier and cheaper. He did acknowledge the social value of set asides and preferences. He claimed a major reason for the use of the contracting process as a means of addressing past discrimination was that Congress did not have to explicitly fund the program.

The author then explained how the set aside goals are set. He listed nine reasons for predicting failure in implementing Federal goal setting policy. They included: vague and ambiguous legislation, difficulty in quantifying output/success, incompatibility with "best product" or minimum need at the lowest price, and no incentive or enforcement mechanism.

The author concluded by recommending discontinuance of the Federal contracting goal setting procedure.

THEORETICAL, NORMATIVE, EMPIRICAL, INDUCTIVE

**"The Defense Industry: An Illusion of a Free Market," Lieutenant Colonel Blair A. Peterson, CPCM, pp. 105-112.**

The author claimed that the defense industry is not the free market it is often conceived to be. He noted there is only one customer (monopsony) and a limited number of suppliers (oligopoly). Congress often legislates under the assumption of a free market when that in fact may not be the case.

Most DOD dollars go into major systems where competition is often quite limited. DOD cannot wait until competition develops to buy their goods. It is expensive to create competition in major systems by bringing additional sources on-line. The other alternative the author cited was to realize one is dealing with a non-competitive market and make the best of it.

The author concluded that Congress and the American public do not understand the true nature of defense contracting and they compare firms in this environment to those in a retail environment. Increased legislation is not required, but an understanding of the defense contracting environment is.

THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"MRP and Government Contract Costing: Are They Compatible?," Norma C. Holter, CPA, pp. 1-10.**

The author defined and explained Material Requirements Planning (MRP) as a planning tool for managing inventories according to production schedules. He then cited deficiencies that DCAA has noted in MRP systems with regard to accurate cost accounting.

Deficiencies noted by the author included transferring material from one contract to another without ACO approval, improper progress payment requests, inaccurate cost schedule control system cost reporting, and inaccurate costs being charged to contracts.

The article concluded that while strides are being made to improve the manufacturing process, in this specific case with MRP, basic accurate costing controls must continue to exist. Effort must be expended by Government and industry to make manufacturing efficiency and cost accounting controls compatible. The goal is achievable.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE**

**"Mission Support Pricing--Telling the Whole Story," R. Dean Golden, pp. 11-22.**

This article detailed the actions the Air Force Logistics Command (AFLC) took to improve spare parts pricing. The author first gave background of publicized spare parts pricing problems and then explained how the apparent mispricing occurred. These problems stemmed from difficulties with cost allocation, limited purchase quantities, buys through a prime incurring a pass through charge on the subcontractor's price, errors, and defective pricing.

Solutions offered by the author to these problems included increasing competition, increasing manpower assigned, reverse engineering, obtaining of data rights to manufacture in-house or break out for competition, obtaining industry cooperation, improving acquisition planning, and improving pricing techniques.

Finally, the author concluded by citing demonstrated improved performance at AFLC as evidence of the effectiveness of the proposed solutions.

**PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC**

**"Congressional Dynamics of the Military Reform Caucus," Colonel Timothy P. Malishenko, CPCM, pp. 23-34.**

The Military Reform Caucus (MRC) is a bicameral ad hoc caucus formed in 1981. Membership is voluntary. The caucus was organized to enable



junior members of Congress to lead, publicize issues, build coalitions, and generate personal visibility on military issues without having membership on the relevant committees. It is particularly difficult in the House to become a member of a committee and influence defense policy because there are so many members and relatively few committees. The MRC provides the avenue without establishing membership on a committee.

Members of DOD should recognize the existence and importance of the MRC. DOD should not focus only on the Armed Services committees in dealing with Congress. DOD should understand the institutional factors at work in Congress and realize that committee membership is not the only indication of a Congressman's interest. Also, membership in the MRC does not indicate a member's opinion or position with regard to DOD.

**THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC**

**"Loss of Manufacturing Sources: An Analysis of Alternative Solutions," David V. Lamm, CPCM, and Elizabeth A. Tracy, CPCM, pp. 35-44.**

The authors developed a model for selecting alternative solutions to loss of a key manufacturing source. They first noted the reasons that manufacturers stop producing items, including financial difficulties, uneconomical production rates, and obsolete technology.

The authors then discussed solutions in four categories: source solutions, engineering solutions, system solutions, and stockpile solutions. Advantages and disadvantages of each solution were detailed.

Finally, the authors presented their model for selecting the best solution. The model is a matrix and selection of the best solution relies on the manager's determination of the quantity required, the complexity of the item, its cost, the stability of design, and the time available in which to make the decision.

**PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC**

**"The Prompt Payment Act in 1987: Collecting From Uncle Sam," Robert A. Donnally and Mark W. Stone, pp. 45-56.**

The Prompt Payment Act of 1982 was enacted to encourage the Government to pay its bills and pay them on time. Delinquencies hurt small businesses and discourage companies from doing business with the Government. With the Prompt Payment Act of 1982, the Government began paying interest on late payments (defined as thirty days after an invoice is received, with a fifteen day grace period). DOD then decided that they had forty-five days in which to pay bills--not the Congressional intent. Now, the Prompt Payment Act of 1987 has arrived. Its provisions include: phase out of the fifteen day grace period, application of the Act to construction contracts,

and provision for automatic payment of interest (vice the previous policy of payment only on request). The underlying cause for the new legislation is that the Government still does not pay its bills promptly.

THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Understanding the Submission Requirement for Cost or Pricing Data,"  
Jeffrey A. Lovitky, pp. 57-65.**

Under the Truth in Negotiations Act, cost or pricing data must be submitted on all negotiated contract actions greater than \$100,000 unless certain exemptions apply. The law covers civilian agencies as well as DOD. The contractor must certify the factual data as current, accurate, and complete as of the date of agreement on price. Submission of raw data does not meet the submission requirement. The data must be organized and indexed to put the Government on equal footing with the contractor in negotiations. All significant data must be brought to the PCO's attention. The article also covered the case law surrounding submission of cost or pricing data and the manner in which case law has interpreted the Truth in Negotiations Act.

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**Volume 21, Winter 1988, Issue 2**

**"The Agendas of the Office of Federal Procurement Policy," Robert P. Bedell, pp. 1-8.**

The Office of Federal Procurement Policy (OFPP) was created as part of the Office of Management and Budget (OMB) in 1974. The authors addressed some of OFPP's new programs designed to establish Government-wide procurement policies and implement the recommendations of the Packard Commission. The OFPP's main accomplishment in its first twelve years was its publication of a single set of Government-wide procurement regulations, the Federal Acquisition Regulation (FAR). However, many agencies developed their own supplements to the FAR, somewhat defeating the objective of a single Government procurement regulation. Also, the Paperwork Reduction Act was being implemented at the same time the FAR was being developed. As a result, procurement was excluded from the Act.

New initiatives of the OFPP are to approve and disapprove paperwork in the procurement process, redefine the procurement regulation development process, simplify Government-wide regulatory policies, and rescind overly burdensome regulations.

THEORETICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Corporate Criminal Liability of the Public Contractor--Are Guidelines Needed?," James J. Graham, pp. 9-20.**

Federal criminal laws are now being applied to corporations. Corporations are criminally liable for acts and statements of their employees/agents accomplished to benefit the corporation and within the scope of their employment. Now, in accordance with the recommendations of the Packard Commission, DOD is encouraging contractor self governance and disclosure of the results of self review.

DOD guidelines allow consideration of self reporting as a mitigating circumstance in suspension and debarment procedures. The belief is that a public contractor acting as a "good citizen" should not bear the same wrath incurred by a non-self reporting contractor.

The author concludes that the Department of Justice should establish similar guidelines to take these factors into account when considering criminal proceedings.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, DEDUCTIVE**

**"How Contractors Can Minimize the Risk of Becoming 'Federal Actors'," George M. Coburn, pp. 21-36.**

The reference to becoming a "Federal Actor" refers to contractors violating the constitutional rights of employees to comply with requirements levied on them in performance of Government contracts. The Supreme Court has established tests to determine when private parties become state actors. Tests include the public function test, the state compulsion test, and the joint action test. However, the court has yet to formulate an all-encompassing test to determine when a private action should be attributed to the state.

Dangers of becoming a Federal actor stem from the fact that Federal officials may be liable for damages in violation of a citizen's rights. If a contractor is found to be a Federal actor, this liability extends to him. The author cited several cases in support of this point. A particular area where contractors become Federal actors is under DOD's Voluntary Disclosure and Present Responsibility Programs. A contractor may become a Federal actor in conducting internal investigations of Federal procurement law violations.

To minimize risks of becoming a Federal actor, the contractor should show regard for the employees' rights not to be treated adversely without just cause determined by fair procedure. Contractors should deal with violations within the company and to disclose to the Government only actions taken, not details of the employee investigations. This will improve contractor self governance and reduce a contractor's liability for constitutional transgressions as a Federal actor.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, DEDUCTIVE**

**"The DOD's Rights in Technical Data and Computer Software Clause--Part II," Maj. Jerome S. Gabig and Roger J. McAvoy, pp. 37-44.**

This article was written due to noteworthy changes in the Department of Defense Federal Acquisition Regulation Supplement (DFARS) clause Rights in Technical Data and Computer Software. In determining rights in technical data, new law requires consideration of how the data were developed--private expense, Government expense, or a combination. It also requires consideration of a benevolent policy toward small businesses and non-profit organizations.

The authors developed a flowchart to derive the Government's minimum rights under a procurement covered by the rights in Technical Data and Computer Software clause, DFARS 52.227-7013 (May 1987).

The authors defined unlimited rights, limited rights, restricted rights of two types, and Government purpose license rights. Technical data is placed in one of these categories depending on the commerciality of the item, whether or not it was developed at private expense, and whether the data were published in the public domain.

Due to the numerous categories and the importance of rights, it is vital to closely monitor the allocation of intellectual property rights in any DOD contract requiring the delivery of software or technical data.

**PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC**

**"Why Firms Refuse DOD Business: An Analysis of Rationale," David V. Lamm, CPCM, pp. 45-56.**

When firms are unwilling to participate in DOD acquisitions, the defense industrial base is seriously affected. This article reported the results of a study to determine why companies do not want DOD business. The author hopes the reasons will be considered by DOD PCO's in making daily procurement decisions.

A survey was sent to 1317 firms. Responses were received from 427. The study focused on the 213 of the 427 which either did not want DOD business or wanted the business but were dissatisfied with the procurement process. The goal of the study was to identify reasons for the dissatisfaction.

The greatest causes of dissatisfaction identified were burdensome paperwork, the Government procurement process (primarily pre-award), inflexible policies and regulations, and low profitability compared to commercial ventures. Problems causing the least dissatisfaction included Government Furnished Equipment (GFE) problems, adverse court or board rulings, adverse GAO decisions, and terminated contracts.

**THEORETICAL, POSITIVE, EMPIRICAL, INDUCTIVE**

**"Defense Profit Policy," Barry J. Shillito, CPCM, and David Westermann, CPCM, pp. 57-66.**

This article responds to an article by Professor G.R. Simonson titled "An Economic Prescription to Defense Profit Policy" in Volume 20, Winter 1987, Issue 2 of the National Contract Management Journal.

The Simonson article espoused interest as an allowable cost, abolition of progress payments, profit based strictly on capital employed, and a return of 25% on net worth before taxes. In arriving at these conclusions, Simonson compared defense industries to durable goods manufacturers.

The authors of this article questioned the validity of a comparison of defense contractors to companies in the durable goods industry. They questioned a profit system based only on capital employed for several reasons. They asserted that talent, labor, management, and risk should all contribute to profit. They believed progress payments to be a more cost effective means of contract financing than allowing interest expense since the Government can borrow more cheaply than contractors.

The authors concluded that consequential changes in profit policy should not be made without thorough study of the possible impact. Efforts should be made to compare defense contractor profits to those of non-defense companies. The Government should provide incentives to well managed companies to compete on the basis of other than price for a significant portion of defense business. Let companies manage their assets themselves.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE**

**"The Truth in Negotiations Act: A Primer," Steven W. Feldman, pp. 67-81.**

The Truth in Negotiations Act (TINA) was passed to ensure the Government obtains fair and reasonable prices by requiring contractors to disclose all known facts during negotiations that could reasonably be expected to have an impact on price negotiations. TINA requires contractors provide cost or pricing data if contract award is expected to exceed \$100,000. It also applies to modifications if changes are expected to exceed \$100,000. The article lists exceptions.

As of the time of agreement on price, the contractor must certify that all cost or pricing data is current, accurate, and complete. The penalty for defective pricing is severe. If the cost or pricing data is not current, accurate, and complete and the PCO relies on it, the PCO can reduce the amount of the contract.

Both PCO's and contractors must understand the Act because of its substantial potential financial impact.

**PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC**

**"Auditors and Investigators: Some Legal Ramifications of the Blurred Distinction Between Criminal and Civil Investigations," Brian C. Elmer and Alan W. H. Gourley, pp. 1-8.**

Traditionally auditors have been concerned with civil law--the law of torts and of contractual matters. Investigators, on the other hand, have dealt traditionally with conduct that society in general does not tolerate. The two are governed by different rules, different courts and different goals. The creation of Inspectors General changed all of that. Now both auditors and investigators are mixed in a single organization combining both civil and criminal responsibilities. The Government is attempting to use every legally permissible means to detect fraud, waste and abuse in the procurement process.

This article discusses the gray areas created by the blending of the two responsibilities. It addresses the fact that some of the rights the U.S. Constitution protects in criminal proceedings may be violated during audit proceedings. Specifically, the article addresses the Fifth Amendment Right of self-incrimination, the Sixth Amendment Right to counsel, the Fourth Amendment right against unlawful search and seizure, the right to privacy and the threat of criminal prosecution to get civil remedies.

**THEORETICAL, POSITIVE, NON-EMPIRICAL, DEDUCTIVE**

**"Government Progress Payments Can Be Tricky Business--Seeking Reimbursement of Payments to Subcontractors," Stuart B. Nibley and Sandra Lee Fenske, pp. 9-23.**

This article is basically a case study of a contractor who was suspended for five months and subjected to a long investigation for possible prosecution on civil and criminal false claims because his interpretation of the SF 1443 (or DD 1195) differed from the Government's. The company had been processing its progress payment requests in the same manner for five years. During that five year period, the contracting officer and the DCAA representatives had approved each request. The Government claimed that the contractor had wrongly included in its requests progress payments paid to its subcontractors between the contractor's monthly accounting cost cutoff dates (Section II on the form) and the dates it submitted the requests to the Government for payment (line 8B on the form).

The article basically supported the contractor's position. The outcome of the case was that the contractor paid a substantial amount in settlement of the alleged civil and criminal false claims, no indictment was ever issued and the suspension was lifted. The contractor agreed to change the way it processed its DD 1195's. The article advises contractors to "revisit their

respective interpretations of the instruction governing the submission of progress payment requests to Government agencies."

THEORETICAL, POSITIVE, NON-EMPIRICAL, INDUCTIVE

**"Validation of Proprietary Data Restrictions: How Contractors Can Protect Their Rights in Technical Data Against Government Challenge," Douglas R. Duberstein, pp. 25-32.**

Procurement agencies now have the authority to challenge a contractor's claim that technical data supplied to the Government is subject to limited rights. In other words, to enable the Government to disclose data the contractor claims is proprietary. This right to challenge is known as the validation procedure. At the time the article was written, there were two separate sets of regulations, one for civilian agencies and one for DOD. Civilian agencies try to balance between the need for data on the Government's part and the contractor's legitimate proprietary rights. Civilian regulations discuss two types of technical data rights: unlimited and limited. Limited rights data include trade secrets, commercially privileged information or data developed at private expense. The Government can only use limited rights data inside the Government and cannot disclose the data to the outside without contractor approval.

The DOD policy on data is to require the minimum level necessary to meet the Government's needs. The DOD adds a third type of data rights called Government purpose limited rights. This type of limitation permits disclosure for Government purposes, including disclosure for competitive procurement but not for private manufacturing. This is usually the case when data is developed at both Government and private expense.

The article went on to discuss the validation procedures for both the civilian agencies and the DOD. It also described procedures that are followed in directing the loser of a validation challenge to offset the winner's costs. Some examination was also made into the judicial review procedures if a contractor wishes to obtain a review of a contracting officer's adverse decision.

THEORETICAL, POSITIVE, NON-EMPIRICAL, DEDUCTIVE

**"Task Order Contracts: Popular, But Are They Legal?," Peter J. Ritenberg, pp. 33-45.**

This article questions the legality of what the author refers to as task order contracts. Task order contracts are indefinite delivery contracts (IDC's). The issue is whether these indefinite arrangements are contrary to the concept of "full and open competition" mandated by CICA.

A comparison is made between IDC contracts and basic ordering agreements (BOA). BOA's are not contracts but agreements and therefore in

accordance with FAR, require synopsis and competition of each action.

The author states that the GAO appears to have changed its pre-CICA view of IDC's. According to the article, pre-CICA IDC's were borderline legal in the eyes of GAO. Post-CICA GAO does not seem to have the same opinion. The article continues by discussing GAO's expressed reservations about unpriced options. This opinion is irreconcilable with the GAO's opinion on IDC's.

Ritenburg concludes with a list of possible questions involving IDC's that should be addressed and urges prospective offerors to protest the next solicitation for a task order contract as "violative of, or at least outside, Federal procurement law and regulations."

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE**

**"Measurement of Defense Profit," G. R. Simonson, pp. 47-53.**

Simonson states that in contradiction to the DFAIR study published in 1985, defense contractors are receiving a rate of return on defense capital above that of non-defense producers of durable goods. He states that the weighted guidelines method of calculating profit on mostly production costs has been primarily responsible for the exceptionally high profit rates experienced by DOD contractors.

According to the article, the measurement of defense profit used in the DFAIR study is misleading and incorrect. First, the study used figures between 1970 and 1979 instead of 1970 and 1983, the period covered by the study. Second, the study used what it called economic profit, not operating profit. Economic profit includes operating costs plus the implicit costs of foregone income. Third, the calculations in the study used economic profit-to-total-assets rate instead of operating profit-to-total-assets less progress payments.

The author concludes by stating that defense contractors were receiving extraordinarily high profit rates which means that taxpayers are paying too much for defense hardware. He recommends that DOD review its weighted guidelines profit policy and shift the emphasis from the production cost to value of capital employed by the contractor.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE**

**"Pathways and Pitfalls for Small Business: Federal Procurement Socioeconomic Programs," Bingham Kennedy and Barry J. Trilling, pp. 55-64.**

There are a number of socioeconomic programs affecting Federal procurement. Some are designed to assist small businesses, such as the set aside program and the SBIR program. Others restrict or eliminate small



business opportunities, such as the Federal Prison Industries, the Javits-Wagner-O'Day Act program for the blind and severely handicapped, and the Industrial Preparedness Planning Program which in times of national crisis would waive requirements to set aside procurements in the interest of national defense.

This article defines small business as it relates to both supplies and services. It then continues with descriptions of many of the programs currently in effect.

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**Volume 22, Winter 1989, Issue 2**

**"Government Furnished Property: Government Furnished Problems," Terrence M. Cleary, pp. 1-8.**

Contractors must normally furnish all material and equipment necessary in performance of Government contract work. However, it is at times cost efficient for the Government to provide property for the contractors' use. This is Government Furnished Property (GFP). This article also considers material to be GFP. Material is property that may be incorporated in or expendable in production of the end item.

Contractors are required to account for GFP, maintain it, segregate it from contractor property, and inventory it.

Most problems with GFP stem from failure of the Government to deliver it, late delivery, or delivery of GFP which is unsuitable for the use for which it was intended. The Government cannot be found in default for these deficiencies. However, contractors are entitled to delays and equitable adjustments based on problems with GFP.

PRACTICAL, POSITIVE, NON-EMPIRICAL, NO PARTICULAR LOGIC

**"Suspension and Debarment of Government Contractors: The Current Climate," David M. Nadler, pp. 9-16.**

The Government is becoming increasingly aggressive in suspending and debarring contractors suspected of engaging in improper conduct. A contractor can be suspended for a period of a year or less for "adequate evidence" of fraud or a criminal offense in obtaining, attempting to obtain, or performing on a public contract, violation of anti-trust laws relating to the submission of offers, theft, embezzlement, forgery, bribery, or falsification of records, violation of the Drug-Free Workplace Act of 1988, or commission of any other act indicating lack of business integrity.

Debarment occurs when a contractor is convicted of any of the above offenses.

Suspension and debarment are not penalties, but ways in which the Government executes its obligation to protect the public interest.

Until recently, a global settlement could be reached with DOD and the Department of Justice (DOJ) to avoid suspension and debarment by resolving civil, criminal, and administrative allegations in a single comprehensive agreement. Now, DOD and DOJ do not agree to global settlements. If someone plea bargains with DOJ, he is still liable to suspension and debarment procedures through DOD. Congress believed that DOJ's willingness to accept global settlements interfered with DOD pursuing defense contractors illegally obtaining Government funds.

The author concluded that contractors should do everything in their power in terms of self governance to ensure corporate integrity. Also, DOD must keep in mind that suspension and debarment procedures are not punitive measures and DOD should exercise restraint. These procedures should be used only to protect the Government's interests.

THEORETICAL, POSITIVE, NON-EMPIRICAL, DEDUCTIVE

**"Are Defense Industry Profits Excessive? A Capital Market Perspective," Maj. Jeffrey A. Sorenson, pp. 17-36.**

The House Armed Services Committee (HASC) recently cited high profit margins for defense contractors in 1984. However, the HASC failed to make the connection between profitability and risk. For the amount of risk they take, these profit margins were not excessively high.

The author examined profitability in terms of the Capital Asset Pricing Model (CAPM). This is a model designed by investment analysts to determine required rates of return given the systematic risk of a company. The systematic risk is quantitatively measured as beta which represents the variability of the firm's stock price relative to the market price.

The author's application of CAPM analysis to large defense contractors indicated that the securities of the entire defense industry underperformed the market for the entire period of analysis (1981-1986). The only exceptions occurred in 1982 and 1984. While HASC may believe profit margins were excessive during this period, investors in the capital markets disagree.

THEORETICAL, POSITIVE, EMPIRICAL, INDUCTIVE

**"The Impact on Defense Industrial Capability of Changes in Procurement and Tax Policy, 1984-1987," The MAC Group, pp. 37-66.**

From 1984 to 1987, Congress and DOD instituted a number of major statutory, regulatory, and management changes. Very little was done to assess the impact of these changes nor their combined impact.

The study focused on cost sharing on new development programs, the new DOD profit policy, lower progress payment rates, special tooling investments, tax law changes, and lower cost recovery. The MAC Group took the significant changes in these areas and applied them retroactively to nine DOD contractors. They then compared the actual results of the programs to the retroactively constructed results.

Analysis of the two sets of data led to conclusions under the new regulations including: ROI would have been less than that necessary to maintain shareholder value; profits would have been reduced by an average of 23% on companies' defense business; companies would have had to borrow heavily, probably more than they would have been granted; companies would have had to reduce R&D funding and opt for low technology alternatives; the impact of changes would first become evident among subcontractors.

Implications to national defense include loss of technology growth and leadership, less efficient industry (less capital investment), less competition as weaker companies leave industry, and less competitive industries in the face of foreign competition.

Recommendations included development of a coordinated policy (not the current piecemeal approach), limitations on single purpose regulations, and provision for incentives for investment. Finally, complete impact assessment should be conducted prior to implementation of new regulations.

#### **THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE**

#### **"Socioeconomic Contract Goal Setting Within the Department of Defense: Promises Still Unfulfilled," Dennis E. Black, Ph.D., CPCM, pp. 67-82.**

The Federal Government uses the procurement system as a vehicle to correct the effects of past discrimination on certain socioeconomically disadvantaged groups. Since 1980, DOD and the civilian agencies have been required to establish annual goals for the award of contract dollars to these groups. In 1987, the National Defense Authorization Act set a DOD goal of five percent of contract dollars for minority concerns in Fiscal Years 1987 and 1989. This method of response to constituents is popular because it requires no budget allocation by Congress. The author theorized that this type of contract goal setting would fail, basically because the goals of the implementing agency did not coincide with those of the legislators.

The author analyzed eleven years of data on Government spending on targeted groups. The research revealed that the new contract goal setting established in 1980 did not result in increased dollars going to these groups. No evidence indicates that use of the procurement process to achieve non-procurement objectives is effective. However, some unintended negative consequences have resulted.

Tax benefits and profit incentives to encourage prime contractors to use small and disadvantaged firms as subcontractors would be better ways of encouraging SDB participation.

#### **THEORETICAL, POSITIVE, EMPIRICAL, INDUCTIVE**

**"Engineers: Allies or Adversaries?," George C. Belev, CPCM, pp. 83-88.**

The engineer is an extremely important member of the procurement team. Engineers are particularly valuable in three phases of the procurement process: development of the initial acquisition strategy, development of the Request for Proposals (RFP), and evaluation of proposals.

In development of the initial acquisition strategy, the PCO develops the integrated procurement plan, the source selection procedures and criteria, and determines the appropriate contract type. The engineer's commitment and expertise are vital in these areas. The engineer must focus not on the immediate, but on the big picture of the procurement process.

The RFP is the key document in the entire process. The engineer must tailor its technical documents to facilitate the procurement process. The specification must sufficiently document the requirement without unduly restricting competition. The cost estimate is also very important. It is used in programming funds and to judge the contractor's cost proposal.

The engineer is also indispensable in evaluation and negotiations.

The author concluded that to ensure a successful procurement, the PCO requires the dedicated assistance of the engineer. Without that assistance, the procurement will probably be unsuccessful.

#### **PRACTICAL, NORMATIVE, NON-EMPIRICAL, DEDUCTIVE**

**"Item Nonavailability: What Are Its Causes?," John J. Mulhern, Ph.D., pp. 89-94.**

Nonavailability of items is becoming a high visibility issue as DOD encounters more difficulties in obtaining needed parts and materials for defense systems. There are many causes for the nonavailability. Manufacturing decline is certainly one. Another is lack of business incentives.

The Diminishing Manufacturing Sources and Material Shortages (DMSMS) program attempts to offer guidelines for programs facing these difficulties. Also, David V. Lamm and Elizabeth Tracy developed an analytical framework for understanding the feasibility of certain corrective actions in response to this problem.

This article cited two cases of item nonavailability. The cases demonstrated material shortages resulting from behavioral and informational reasons. In one case, the firm chose not to do business with the Government. This was a behavioral reason for nonavailability. However, the parts the

company no longer supplied existed under other stock numbers, so a shortage did not in fact exist. DOD did not immediately recognize this fact for informational reasons.

The author concluded that DOD must document cases of nonavailability so significant problems can be identified. DOD should not focus simply on manufacturing decline as the cause of nonavailability. There are informational and behavioral reasons as well.

**THEORETICAL, NORMATIVE, NON-EMPIRICAL, INDUCTIVE**

**"The Use of Project Management When Purchasing and Implementing a Hardware/Software System," Darryl L. Chuman, pp. 95-98.**

Computer technology is so complex that vendors often decide for customers what is in the best interest of the customer. A customer may want to take this trusting approach if he truly has no idea what he needs. However, the prudent buyer would do better to gather a group of experts with knowledge in the technical, functional, financial, and contractual areas to serve on the acquisition team. Together, they should develop a plan to accomplish their mission. The author outlined ten steps to follow with the team in acquisition of computer systems. They are essentially the same steps involved in a standard negotiated procurement. The author concluded that the project management approach is the best one in hardware/software acquisition.

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